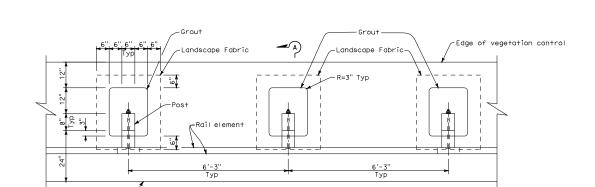
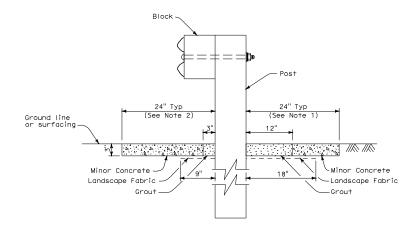


8-3-0



PLAN

Edge of vegetation control



SECTION A-A



To accompany plans dated _

NOTES:

- Where the distance between back of post and hinge point is less than 24', vegetation control to be constructed flush with the back edge of the post.
- Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
- 3. Direction of adjacent traffic indicated by -.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

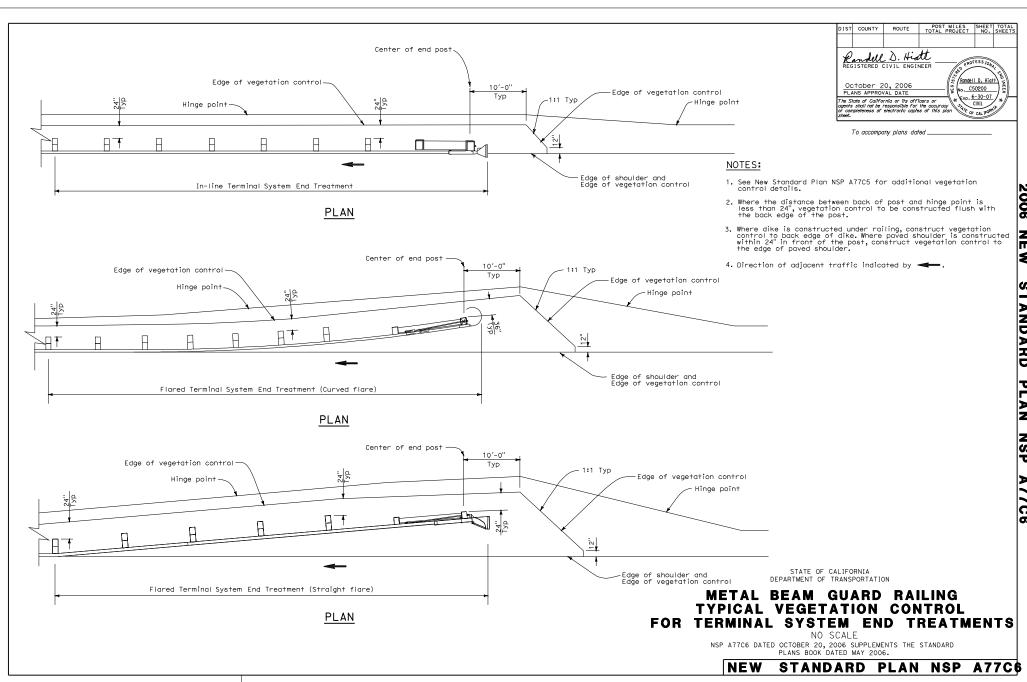
METAL BEAM GUARD RAILING TYPICAL VEGETATION CONTROL STANDARD RAILING SECTION

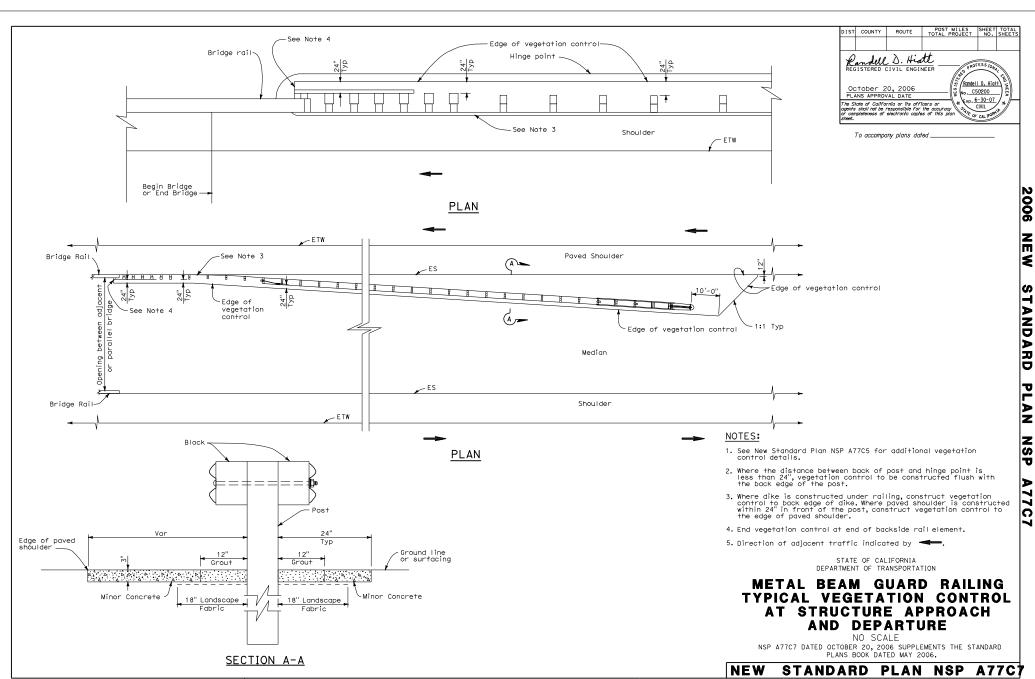
NO SCALE

NSP A77C5 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A77C5





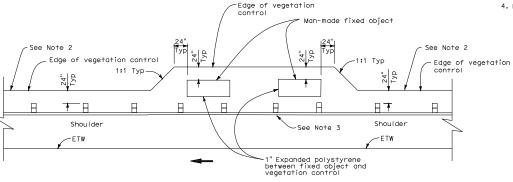


DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL
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PLA	NS APPROV	AL DATE			- <i> ∞ </i>
agents	shall not be	rnia or its offi responsible for electronic copie		CIVIL CAL IFORM]*[**

To accompany plans dated ___

NOTES:

- See New Standard Plan NSP A77C5 for additional vegetation control details.
- Where the distance between back of post and hinge point is less than 24', vegetation control to be constructed flush with the back edge of the post.
- 3. Where dike is constructed under railing, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 24" in front of the post, construct vegetation control to the edge of paved shoulder.
- 4. Direction of adjacent traffic indicated by ----.



<u>PLAN</u>

FIXED OBJECT(S) ON SHOULDER

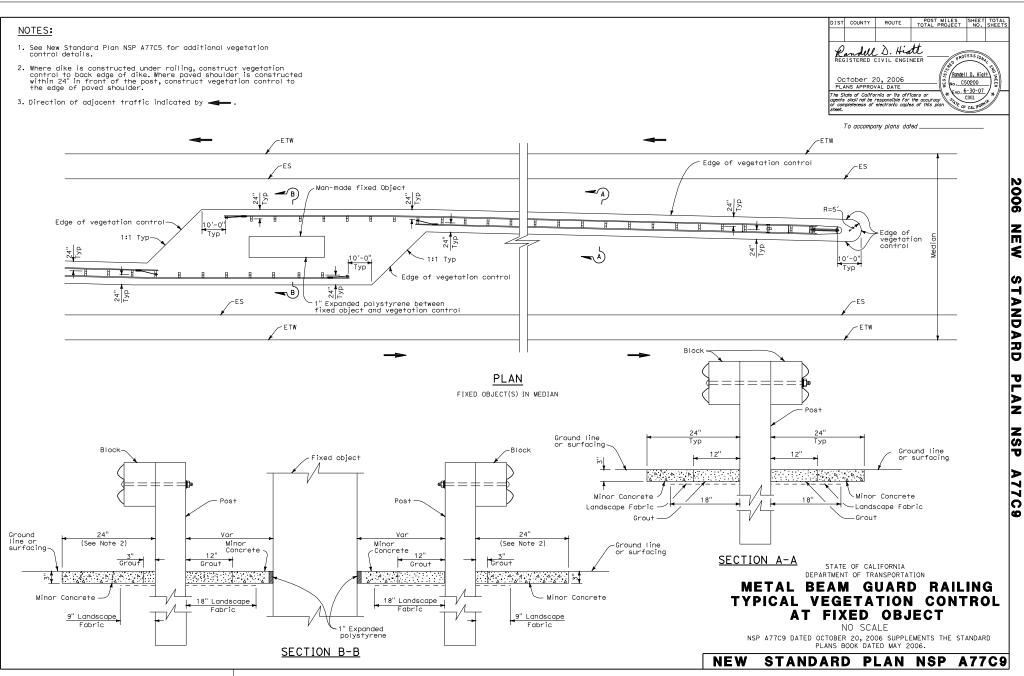
STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL VEGETATION CONTROL AT FIXED OBJECT

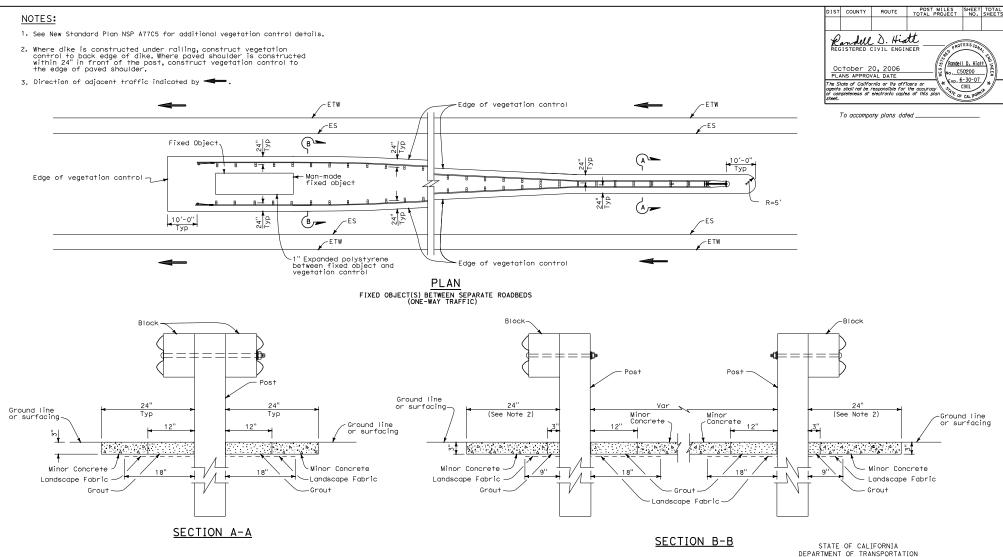
NO SCALE

NSP A77C8 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A77C8







METAL BEAM GUARD RAILING TYPICAL VEGETATION CONTROL AT FIXED OBJECT

NO SCALE

NSP A77C10 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

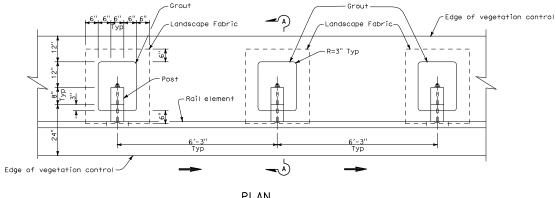
STANDARD PLAN NSP A77C10



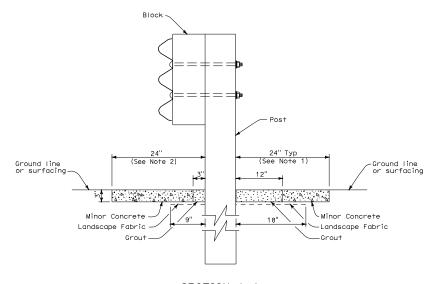
To accompany plans dated _

NOTES:

- Where the distance between back of post and hinge point is less than 24", vegetation control to be constructed flush with the back edge of the post.
- 2. Where dike is constructed under barrier, construct vegetation control to back edge of dike. Where paved shoulder is constructed within 2d* in front of the post, construct vegetation control to the edge of paved shoulder.
- 3. Direction of adjacent traffic indicated by -.



PLAN



SECTION A-A

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SINGLE THRIE BEAM BARRIER TYPICAL VEGETATION CONTROL STANDARD BARRIER RAILING SECTION

NSP A78C3 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

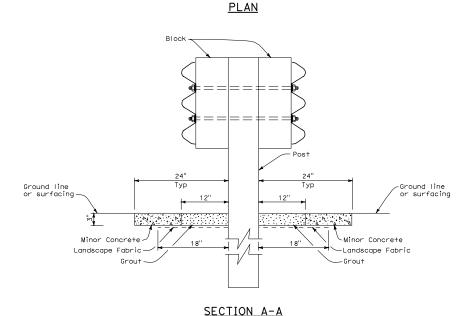
STANDARD PLAN NSP A78C3 NEW



To accompany plans dated ___

NOTE:

1. Direction of adjacent traffic indicated by ----.



Landscape Fabric

Rail element

Edge of vegetation control

- Grout -

Landscape Fabric

-R=3" Typ

-Edge of vegetation control

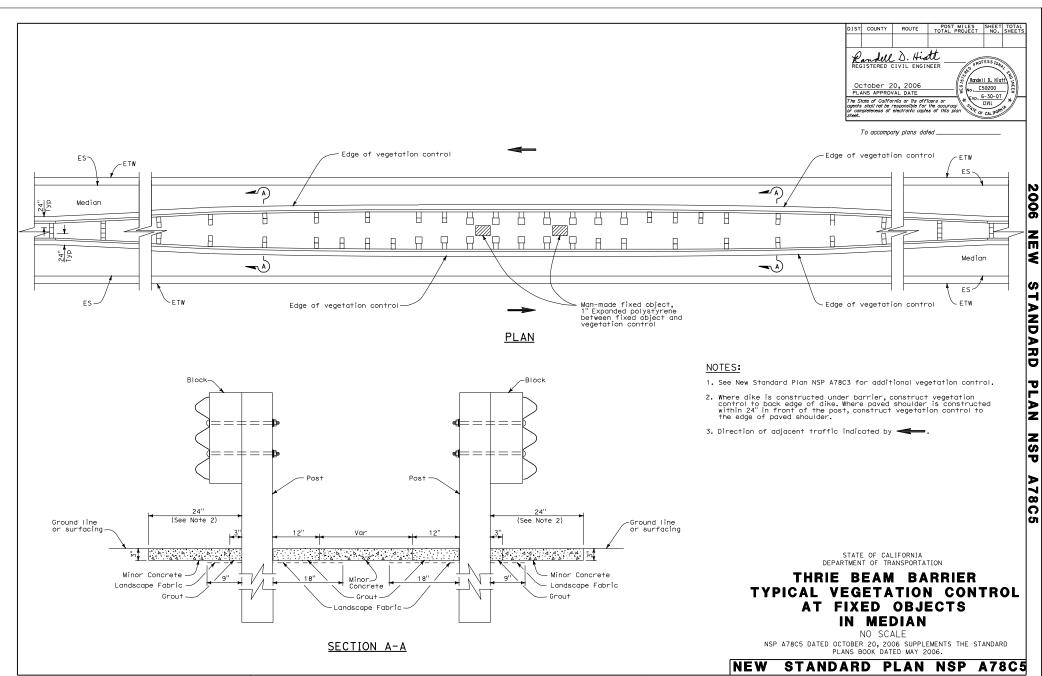
STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DOUBLE THRIE BEAM BARRIER TYPICAL VEGETATION CONTROL STANDARD BARRIER RAILING SECTION

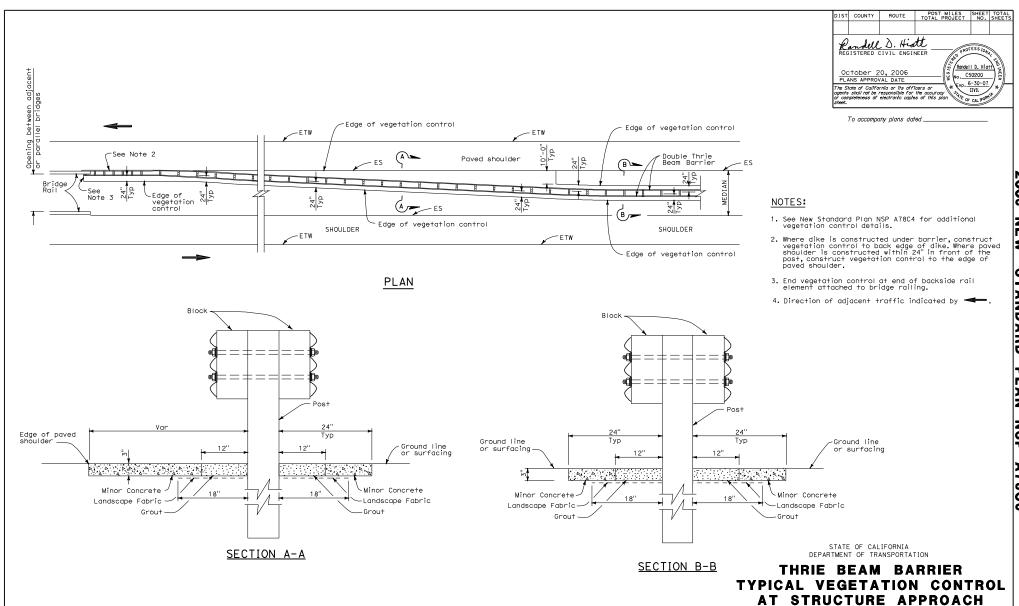
NO SCALE

NSP A78C4 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP A78C4

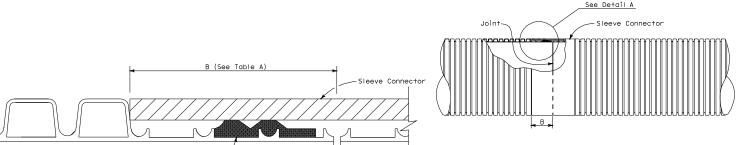






NSP A78C6 DATED OCTOBER 20, 2006 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006. STANDARD PLAN NSP A78C6

NO SCALE



Gasket

Single Gasket

BELL

Gasket

Double Gasket

Double Gasket

End.

<u>SPIGOT</u>

Insertion line

DETAIL A

DETAIL B

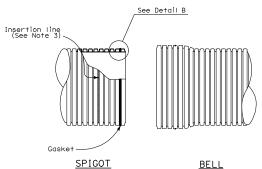
A (See Table A)

DETAIL C

(Single gasket shown)

Gasket





DIST COUNTY ROUTE POST MILES SHEET TOTAL PROJECT NO. SHEETS TOTAL PROJECT NO. SHEETS NO.

Exp. 6-30-08

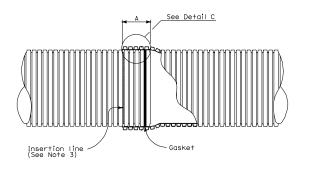
CIVIL

NOTES:

- 1. For pipe sections installed on straight alignment, the pipe sections shall be joined to achieve maxium joint overlap at all points on the periphery as indicated in Table A where the plans call for positive or watertight joints. Maxium joint overlap is recommended where the plans call for standard joints, but in no case shall the joint overlap be less than 3½".
- 2. For pipe sections installed on curved alignment, the maxium angle of deflection from straight alignment at any joint shall not exceed two degrees. Where the plans call for watertightness, field testing for compliance is required. Where plans call for positive joints, the pipe sections shall be joined to achieve Table A Dimensions on one side of the joint. Joints classified as standard shall have no less than 3½ joint overlap at any point on the periphery.
- 3. Factory applied insertion line limit shall be placed on spigot.
- 4. Liner insert to be used inside of existing pipe.

TABLE A

JOINT OVERLAP DIMENSIONS					
PIPE Dia (NOMINAL)	А	В			
12"	5¾"	41/4"			
15"	6¾"	55%"			
18"	6¾"	5%"			
21"	81/2"	5%"			
24"	81/2"	61/8"			
30"	81/2"	71/8"			
36''	81/2"	81/8"			



BELL AND SPIGOT JOINT

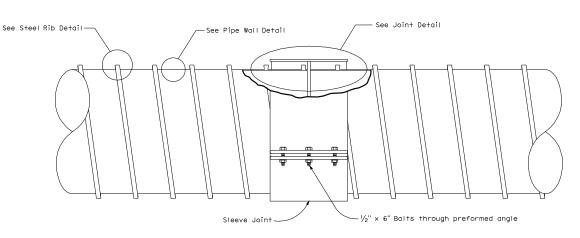
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CORRUGATED POLYVINYL CHLORIDE PIPE WITH SMOOTH INTERIOR STANDARD AND POSITIVE JOINTS

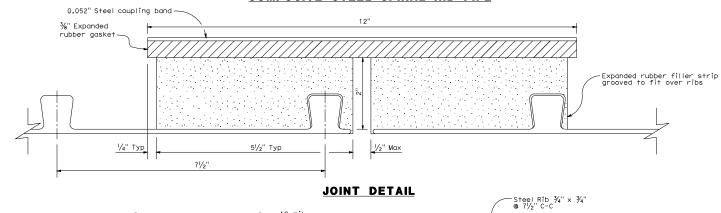
NSP D97I DATED MARCH 7, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

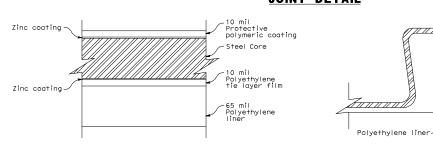
NEW STANDARD PLAN NSP D971

2-1



COMPOSITE STEEL SPIRAL RIB PIPE





PIPE WALL DETAIL

STEEL RIB DETAIL

DIST COUNTY ROUTE TOTAL PROJECT NO. SHEETS TOTAL PROJECT NO. SHEETS NO. SHEET

To accompany plans dated ___

NOTES:

- 1. Pipe to conform to ASTM A 978.
- See Standard Plan A62F for backfill details.
- Protective polymer film to conform to ASTM A 742 and AASHTO M 246.
- See Standard Plan D97C for Universal Coupling details.
- Strap joint connection shall consist of 2 separate bolted preformed connectors joined to form one strap when pipe inside diameter is greater than or equal to 60°.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

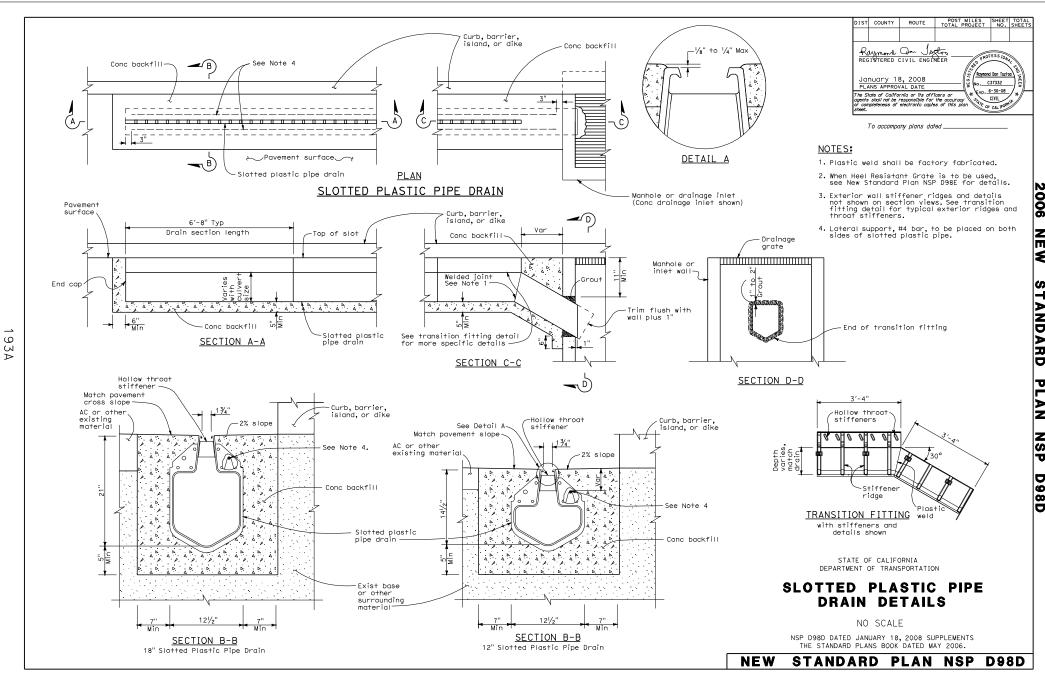
COMPOSITE STEEL SPIRAL RIB PIPE WITH SMOOTH INTERIOR STANDARD JOINT

NO SCALE

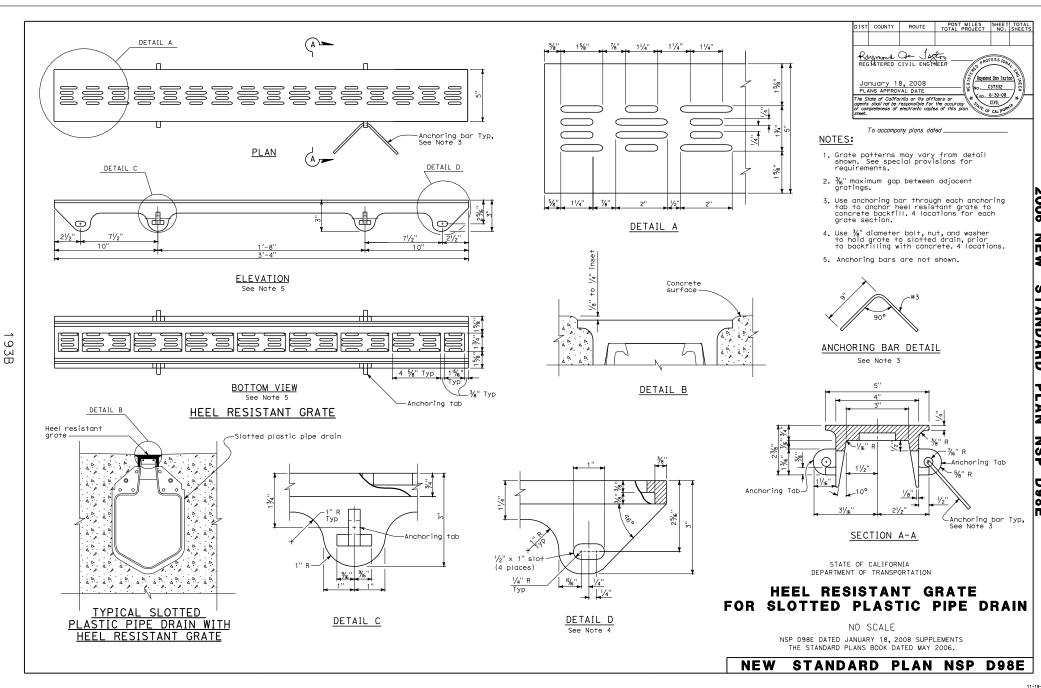
NSP D97J DATED JUNE 6, 2008 SUPPLEMENTS THE STANDARD PLANS BOOK DATED MAY 2006.

NEW STANDARD PLAN NSP D97J

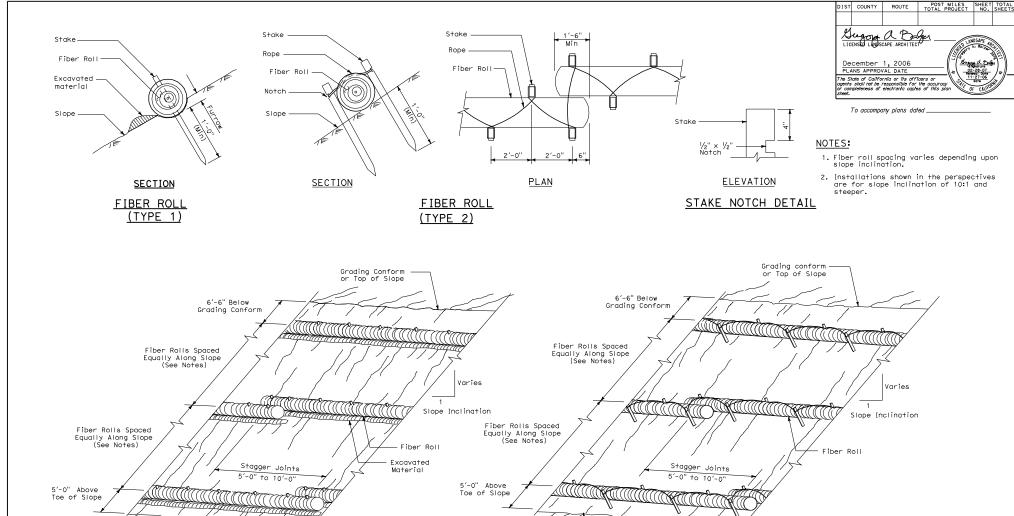












Grading Conform

PERSPECTIVE

FIBER ROLL (TYPE 1)

Grading Conform

or Toe of Slope

PERSPECTIVE

FIBER ROLL (TYPE 2)

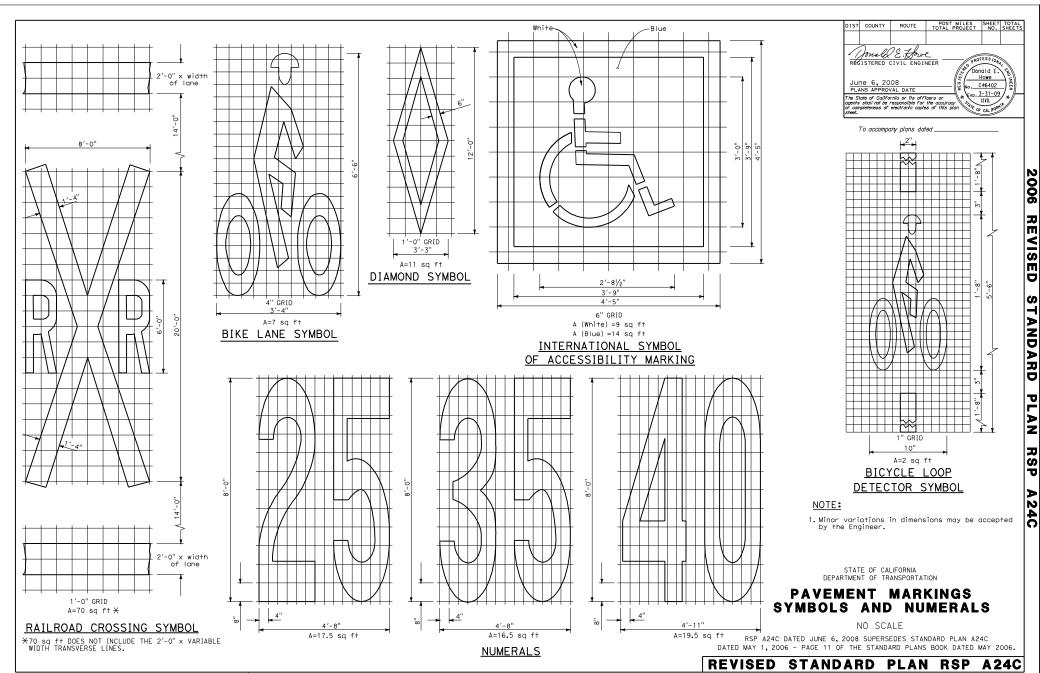
EROSION CONTROL DETAILS (FIBER ROLL)

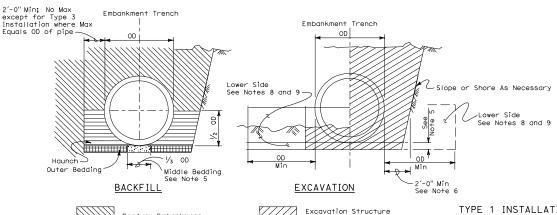
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

NO SCALE

NSP H51 DATED DECEMBER 1, 2006 SUPPLEMENTS
THE STANDARD PLANS BOOK DATED MAY 2006

NEW STANDARD PLAN NSP H51





(Culvert)

TYPE 1 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 30 and the maximum percentage passing the 75 µm sieve size shall be 12.

TYPE 2 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 90 percent relative compaction. In addition, the minimum sand equivalent in these areas shall be 25.

TYPE 3 INSTALLATION:

The haunch and outer bedding shall be compacted to a minimum 85 percent relative compaction. 90 percent relative compaction will be required where the fill over the pipe is less than 4'-0" or 1/2 OD.

INSTALLATION TYPE 1

Roadway Embankment

Structure Backfill

Structure Backfill

Loose Backfill

(Culvert) See Note 6

(Culvert) See Note 6

MINIMUM CLASS AND D-LOAD	COVER			
	108" Dia AND SMALLER	OVER 108" Dia		
Class II 1000D	14.9'	12.9'		
Class III 1350D	15.0' - 20.9'	13.0′ - 18.9′		
Class III Special 1700D	21.0' - 26.9'	19.0' - 24.9'		
Class IX 2000D	27.0′ - 31.9′	25.0′ - 29.9′		
Class Ⅲ Special 2500D	32.0' - 40.9'	30.0' - 38.9'		
Class ¥ 3000D	41.0′ - 49.9′	39.0′ - 46.9′		
Class ¥ Special 3600D	50.0' - 59.0'	47.0′ - 58.0′		

INSTALLATION TYPE 2

TYPE 2
COVER
9.9'
10.0'- 14.9'
15.0′ - 19.9′
20.0′ - 24.9′
25.0′ - 31.9′
32.0′ - 38.9′
39.0′ - 47.0′

INSTALLATION TYPE 3

INSTALLATION THE S						
MINIMUM CLASS AND D-LOAD	COVER					
	48" Dia AND SMALLER	OVER 48" Dia				
Class I 1000D	7.9′	5.9′				
Class III 1350D	8.0' - 10.9'	6.0' - 8.9'				
Class II Special 1700D	11.0' - 14.9'	9.0' - 12.9'				
Class II 2000D	15.0′ - 17.9′	13.0′ - 15.9′				
Class Ⅲ Special 2500D	18.0' - 21.9'	16.0' - 19.9'				
Class ¥ 3000D	22.0′ - 26.9′	20.0′ - 24.9′				
Class ¥ Special 3600D	30.0' - 33.0'	25.0' - 31.0'				

D1S1	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS			
REGISTERED CIVIL ENGINEER								
	November 17, 2006 PLANS APPROVAL DATE No. C37765 Exp. 12-31-06							
agent	s shall not be impleteness of	rnia or its offi responsible for electronic copie	the accuracy					

To accompany plans dated

NOTES:

1. Unless otherwise shown on the plans or specified in the special provision, the Contractor shall have the option of selecting the class of RCP and the type of installation to be used, provided the height of cover does not exceed the value shown for the RCP selected.

Example: 24" RCP culvert with maximum cover of 19'-0"' the options are:

- a) Class III or stronger with Installation Type 1.
- b) Class II Special or stronger with Installation Type 2.
- c) Class I Special or stronger with Installation Type 3. Cover is defined as the maximum vertical distance from top of

the pipe to finished grade within the length of any given culvert.

- 2. The class of RCP and Installation Type selected shall be the same throughout the length of any given culvert.
- 3. The "length of any culvert" is defined as the culvert between:
 - a) Successive drainage structure (inlets, junction boxes, headwalls, etc.).
 - b) A drainage structure and the inlet or outlet end of the culvert.
 - c) The inlet and outlet end of the culvert when there are no intervening drainage structures.
- 4. Oval and arch shaped RCP shall not be used.
- 5. 1/25 OD Min, not less than 3".
- 6. Slurry cement backfill may be substituted for backfill in the outer bedding and haunch areas. If slurry is used the outer and middle beddings shall be omitted. Prior to installation the soil under the middle $\frac{1}{3}$ of the outside diameter of the pipe shall be softened by scarifying or other means to a minimum depth of 1/5 OD, but not less than 3". Where slurry cement backfill is used clear distance to trench wall may be reduced as set forth in Section 19-3.062 of the Standard Specifications.
- 7. Backfill shall be placed full width of excavation except where dimensions are shown for backfill width or thickness. Dimensions shown are minimums.
- Lower side shall be suitable material as determined by the Engineer. Otherwise it shall be considered unsuitable as set forth in Section 19-2.02 of the Standard Specifications. See Note 9.
- 9. Where the pipe is placed in a trench, if the trench walls are sloped at 5 vertical to 1 horizontal or steeper for at least 90 percent of the trench height or up to not less than 12" from the grading plane, the firmness of the soil in the lower side need not be
- 10. Non-reinforced precast concrete pipe sizes 3'-0" or smaller may be placed under installation Types 1, 2 or 3.

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

EXCAVATION AND BACKFILL CONCRETE PIPE CULVERTS

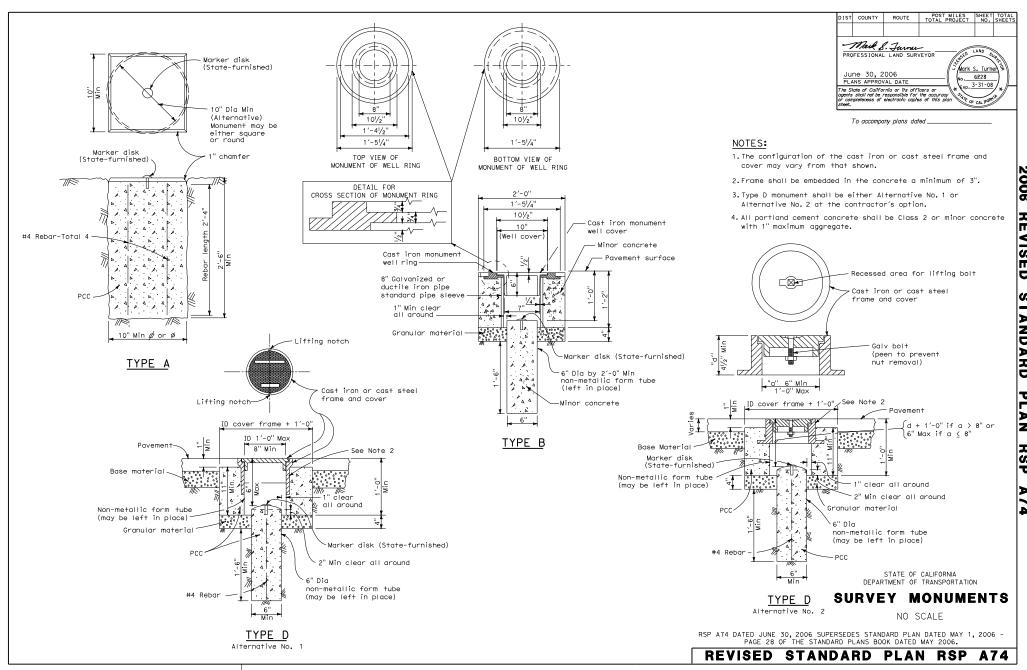
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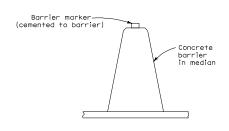
RSP A62DA DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN A62DA DATED MAY 1, 2006 - PAGE 20 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A62DA

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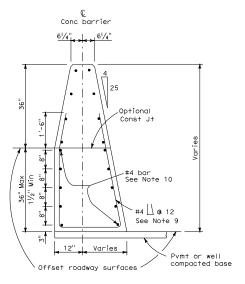






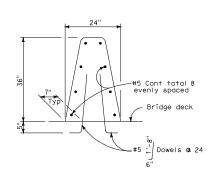
CONCRETE BARRIER TYPE 60 DELINEATION

See Notes 7 and 8

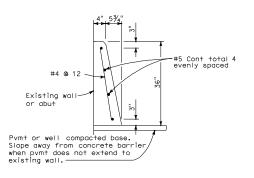


CONCRETE BARRIER TYPE 60C

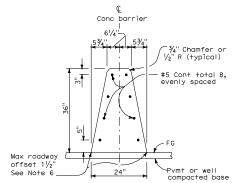
Details similar to Type 60 except as noted. Concrete barrier end anchor when necessary. 36" roadway surfaces offset shown.



CONCRETE BARRIER TYPE 60A Details similar to Type 60 except as noted.



CONCRETE BARRIER TYPE 60D





To accompany plans dated

DIST COUNTY

CONCRETE BARRIER TYPE 60

NOTES:

- 1. See Standard Plan A76B for details of Concrete Barrier Type 60 end anchors, connection to structures and transitions to Concrete Barrier Type 50 and Concrete Barrier Type 60S.
- 2. See Standard Plan A76C for Concrete Barrier Type 60 transitions at bridge column and sign pedestals.
- 3. Where glare screen is required on Concrete Barrier Type 60, use Concrete Barrier Type 60G.
- 4. Where the concrete barrier is added to the face of existing concrete structure, match existing weep holes.
- 5. Expansion joints in concrete barrier shall be located at all deck, pavement and principal wall joints. Expansion joint filler material shall be the same size as joint or $\frac{1}{2}$ " minimum.
- 6. Where roadway offset is greater than $1\frac{1}{2}$, see Concrete Barrier Type 60C.
- 7. Barrier delineation to be used when required by the Special Provisions.
- 8. Spacing of barrier markers to match spacing of raised pavement markers on the adjacent median edgeline pavement delineation.
- 9. Reinforcing stirrup not required for roadway offsets less than 1'-0".
- 10. For roadway surfaces offset greater than $1\frac{1}{2}$ " to 3", no rebars required. For roadway surfaces offset greater than 3" to 8" use two #4 rebars at 3" above the lower roadway surface. For roadway surfaces offset greater than 8" to 12", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at 8" above the lower roadway surface. For roadway surfaces. offset greater than 12" to 36", use two #4 rebars at 3" above the lower roadway surface and two #4 rebars at every 8" increment vertical spacing above the first two #4 rebars.

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

CONCRETE BARRIER TYPE 60

NO SCALE

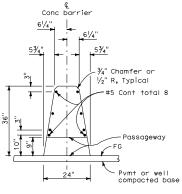
RSP A76A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A76A DATED MAY 1, 2006 - PAGE 29 OF THE STANDARD PLANS BOOK DATED MAY 2006.

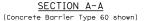
REVISED STANDARD PLAN RSP A76A

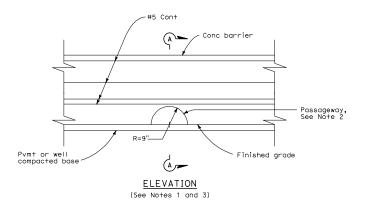
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DIST	COUNTY	ROUTE	POST MIL TOTAL PRO		SHEET NO.	TOTAL		
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REC	REGISTERED CIVIL ENGINEER							
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PLA	ANS APPROV	/AL DATE	- W		-30-09			
agents	shall not be	rnia or its affi responsible for electronic copie	the accuracy as of this plan		CIVIL CAL IFORM			

To accompany plans dated __







NOTES:

- Type S Passageway typically used for crossing of small size animals.
- At the option of the Contractor, the passageway opening shall be constructed by using either the cast-in-place method, with the allowance of the form to be left in place, or once the barrier is constructed, drilling through the barrier to create the opening.
- See Revised Standard Plan RSP A76A for typical details of Concrete Barrier Type 60.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CONCRETE BARRIER WILDLIFE PASSAGEWAY (TYPE S)

NO SCALE

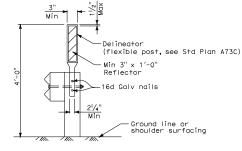
RSP A76J DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A76J DATED MAY 1, 2006 - PAGE 38 OF THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS		
Rendell D. Hiatt REGISTERED CIVIL ENGINEER June 6, 2008 PLANS APPROVAL DATE PLANS APPROVAL DATE PLANS APPROVAL DATE							
The State of California or its officers or agents shall not be responsible for the occuracy or completeness of electronic copies of this plan sheet.							

To accompany plans dated ___

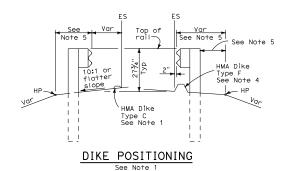
NOTES:

- When necessary to place dike in front of face of guard railing, only Type C dike may be used. For dike details, see Standard Plan ARTR
- 2. For standard railing post embedment, see Standard Plans A77C3.
- Guard railing delineation to be used where shown on the Project Plans.
- 4. When dike or curb is placed under guard railing, the maximum height of the dike or curb shall be 4". Mountable dike should not be used. For dike and curb details, see Revised Standard Plans RSP A87A and Standard Plan A87B.
- 5. For details of typical distance between the face of rail and hinge point, see Standard Plan A77C3.



GUARD RAILING DELINEATION

See Note 3

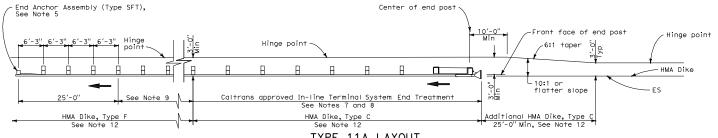


STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

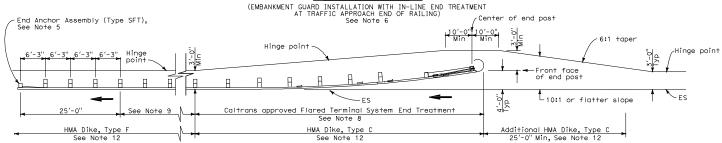
METAL BEAM GUARD RAILING TYPICAL RAILING DELINEATION AND DIKE POSITIONING DETAILS

NO SCALE

RSP A77C4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77C4 DATED MAY 1, 2006 - PAGE 47 OF THE STANDARD PLANS BOOK DATED MAY 2006.

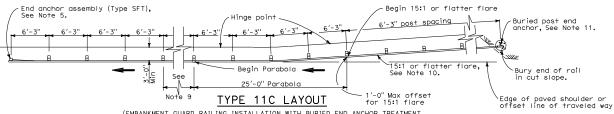


TYPE 11A LAYOUT



TYPE 11B LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AT TRAFFIC APPROACH END OF RAILING) See Note 6



(EMBANKMENT GUARD RAILING INSTALLATION WITH BURIED END ANCHOR TREATMENT AT TRAFFIC APPROACH END OF RAILING)
See Notes 6 and 12

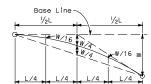
NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1, and A77C2.
- 2. Guard rail post spacing to be $6^\prime\text{--}3^{\prime\prime}$ center to center, except as otherwise noted.
- 3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6° x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0' in length, with 6" x 8" x 1'-2" notched wood blocks or recycled plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- Direction of adjacent traffic indicated by -----
- 5. For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- 6. Layout Types 11A, 11B or 11C are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for only one direction of traffic.

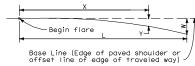
- 7. In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- 8. The type of terminal system end treatment to be used will be shown on the Project Plans.
- 9. Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post spacing) may be advisable.
- 10. The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- 11. For details of the buried post end anchor used with Type 11C Layout, see Standard Plan A7712.
- 12. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.



To accompany plans dated.

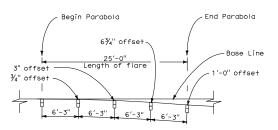


TYPICAL PARABOLIC LAYOUT



= Offset from base line W = Maximum offset
X = Distance along base line wx2

L = Length of flare PARABOLIC FLARE OFFSETS

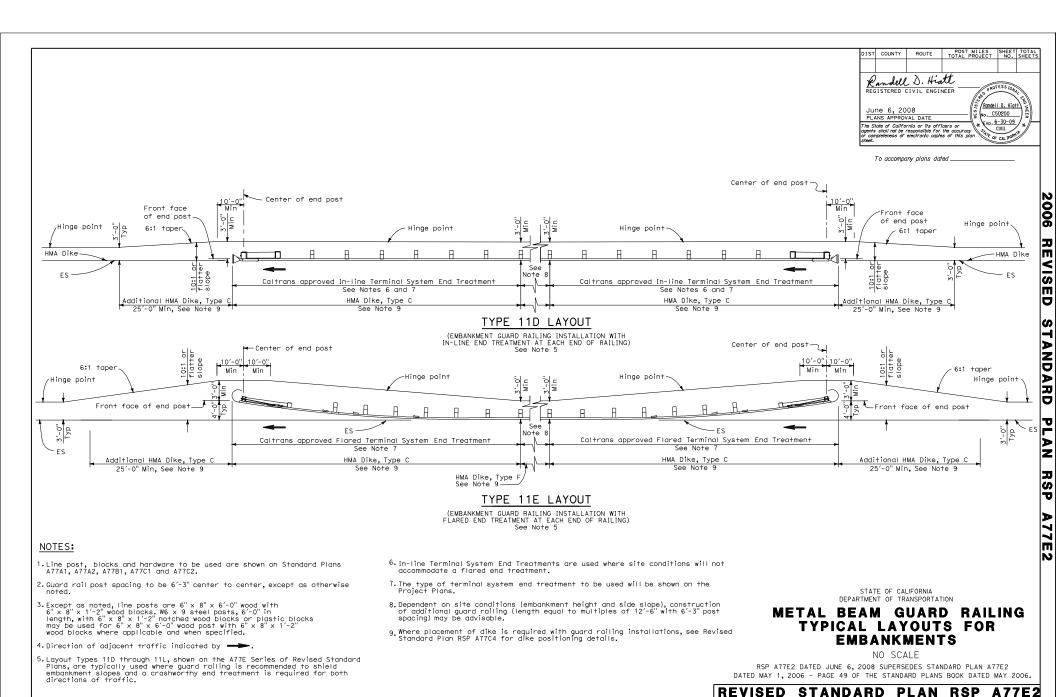


TYPICAL FLARE OFFSETS FOR 1 FOOT MAX END OFFSET

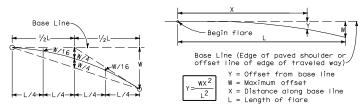
> STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR **EMBANKMENTS**

RSP A77E1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E1 DATED MAY 1, 2006 - PAGE 48 OF THE STANDARD PLANS BOOK DATED MAY 2006.



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REGISTERED CIVIL ENGINEER

JUNE 6, 2008

PLANS APPROVAL DATE

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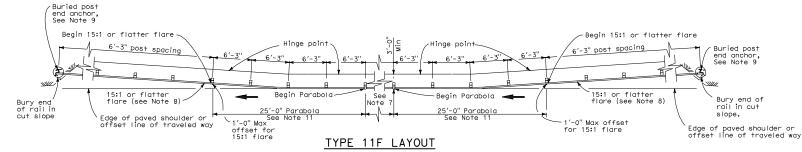
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To accompany plans dated ___

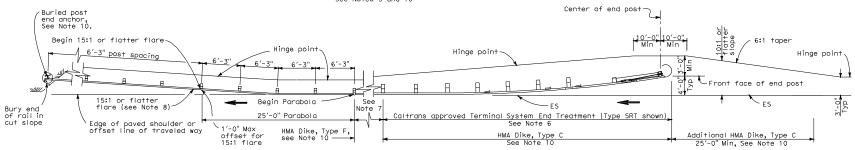
ROUTE

COUNTY

TYPICAL PARABOLIC LAYOUT PARABOLIC FLARE OFFSETS



(EMBANKMENT GUARD RAILING INSTALLATION WITH A BURIED END ANCHOR TREATMENT AT EACH END OF RAILING) See Notes 5 and 10



TYPE 11G LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AND A BURIED END ANCHOR TREATMENT AT THE ENDS OF RAILING) See Notes 5 and 10

NOTES:

- 1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- 2. Guard rail post spacing to be $6^\prime\text{--}3^{\prime\prime}$ center to center, except as otherwise noted.
- 3. Except as noted, line posts are $6" \times 8" \times 6^{\prime}-0"$ wood with $6" \times 8" \times 1'-2"$ wood blocks, $W6 \times 9$ steel posts, 6'-0" in length, with $6" \times 8" \times 1'-2"$ notched wood blocks or plastic blocks may be used for $6" \times 8" \times 6'-0"$ wood post with $6" \times 8" \times 1'-2"$ wood blocks where applicable and when specified.
- 4. Direction of adjacent traffic indicated by \longrightarrow .
- Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.

- 6. The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction
 of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post
 spacing) may be advisable.
- 8. The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- For details of the buried post end anchor used with Type 11F and 11G Layouts, see Standard Plan A7712.
- 10. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- 11. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.

STATE OF CALIFORNIA
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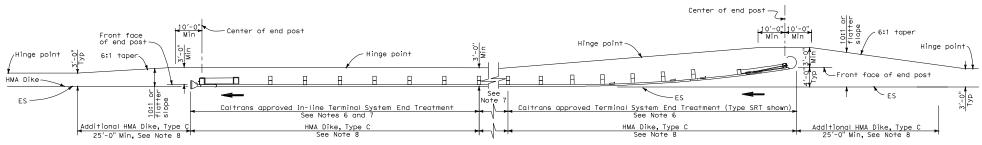
METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

RSP A77E3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E3
DATED MAY 1, 2006 - PAGE 50 OF THE STANDARD PLANS BOOK DATED MAY 2006.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS		
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To accompany plans dated _____



TYPE 11H LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH FLARED END TREATMENT AND AN IN-LINE TREATMENT AT THE ENDS OF RAILING) See Notes 5 and 8

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- 2. Guard rail post spacing to be $6^\prime\text{--}3^{\shortparallel}$ center to center, except as otherwise noted.
- 3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- 4. Direction of adjacent traffic indicated by ----.

- 5. Layout Types 11D through 11L, shown on the A7TE Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embankment slopes and a crashworthy end treatment is required for both directions of traffic.
- 6. The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction
 of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post
 spacing) may be advisable.
- 8. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.

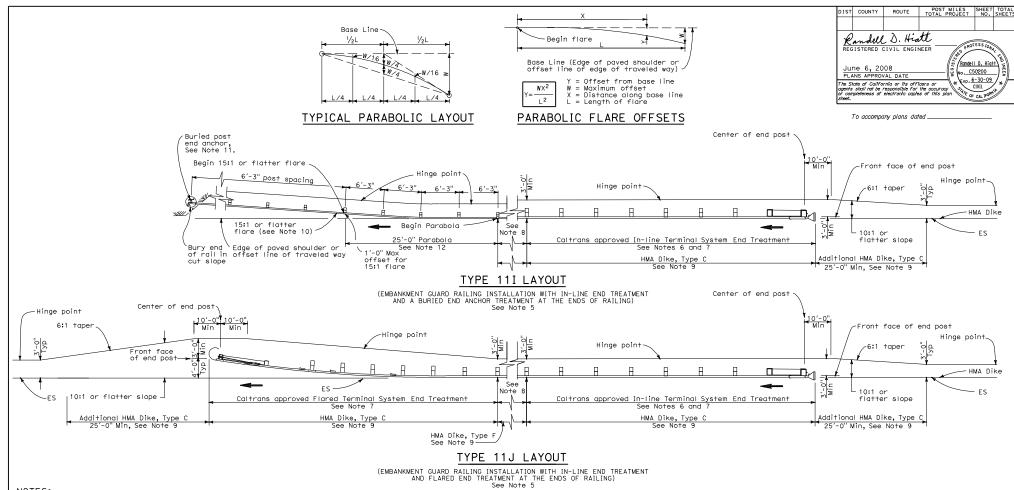
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR EMBANKMENTS

NO SCALE

RSP A77E4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E4 DATED MAY 1, 2006 - PAGE 51 OF THE STANDARD PLANS BOOK DATED MAY 2006.





NOTES:

- 1.Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- 2. Guard rail post spacing to be $6^\prime\text{--}3^{\prime\prime}$ center to center, except as otherwise noted.
- 3. Except as noted, line posts are 6" \times 8" \times 6'-0" wood with 6" \times 8" \times 1'-2" wood blocks. W6 \times 9 steel posts, 6'-0" in length, with 6" \times 8" \times 1'-2" not-hed wood blocks or plastic blocks may be used for 6" \times 8" \times 6'-0" wood post with 6" \times 8" \times 1'-2" wood blocks where applicable and when specified.
- 4. Direction of adjacent traffic indicated by
- 5. Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embamkment slopes and a crashworthy end treatment is required for both directions of traffic.
- 6.In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.

- 7. The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction
 of additional guard railing (length equal to multiples of 12'-6" with 6'-3" post
 spocing) may be advisable.
- 9. Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- 10. The 15:1 or flatter flare used with buried end anchors is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- 11. For details of the buried post end anchor used with Type 11I Layout, see Standard Plan A7712.
- 12. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR EMBANKMENTS

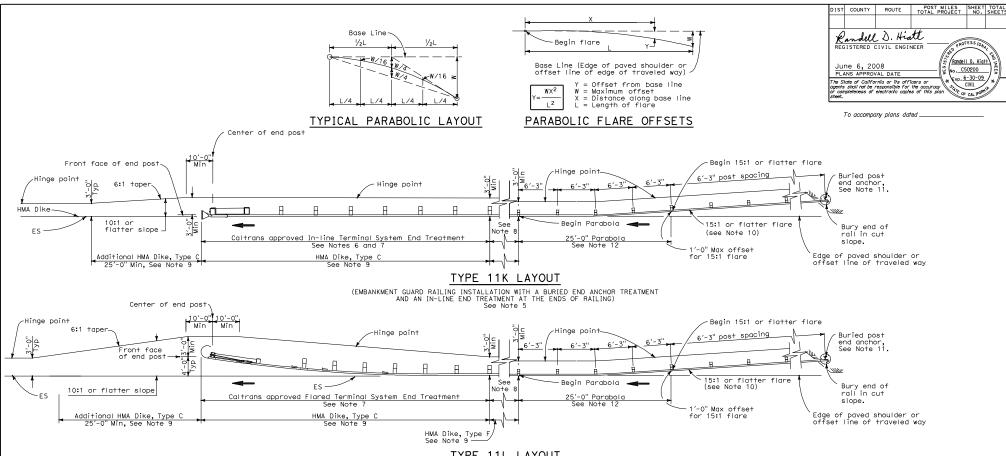
NO SCALE

RSP A77E5 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E5 DATED MAY 1, 2006 - PAGE 52 OF THE STANDARD PLANS BOOK DATED MAY 2006.



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TYPE 11L LAYOUT

(EMBANKMENT GUARD RAILING INSTALLATION WITH A BURIED END ANCHOR TREATMENT AND A FLARED END TREATMENT AT THE ENDS OF RAILING) See Note 5

NOTES:

- 1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- 2. Guard rail post spacing to be 6'-3" center to center, except as otherwise noted.
- 3. Except as noted, line posts are 6" \times 8" \times 6'-0" wood with 6° x 8" x 1'-2" wood blocks. W6 x 9 stee posts, 6'-0" in length, with 6" x 8" x 1'-2" notched wood blocks or plastic blocks may be used for 6" x 8" x 6'-0" wood post with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- 4. Direction of adjacent traffic indicated by
- 5. Layout Types 11D through 11L, shown on the A77E Series of Revised Standard Plans, are typically used where guard railing is recommended to shield embamkment slopes and a crashworthy end treatment is required for both
- 6. In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.

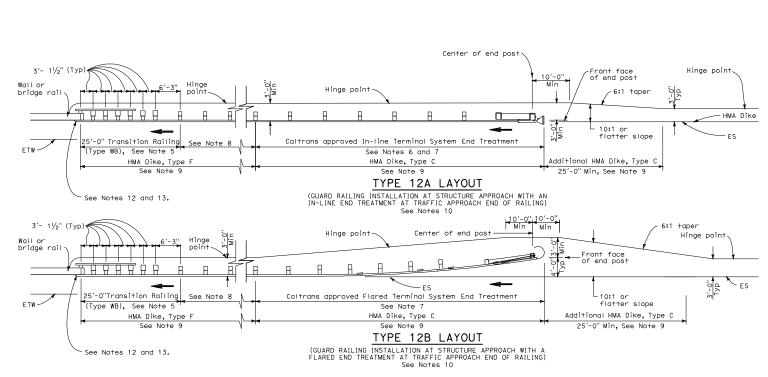
- 7. The type of terminal system end treatment to be used will be shown on the Project Plans.
- Dependent on site conditions (embankment height and side slope), construction of additional guard railing (length equal to multiples of 12'-6" with 6′-3" post spacing) may be advisable.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- 10. The 15:1 or flatter flare used with buried end anchors is based on the edge of the poved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12-6".
- 11. For details of the buried post end anchor used with Type 11K and 11L Layouts, see Standard Plan A7712.
- 12. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.

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METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR **EMBANKMENTS**

NO SCALE

RSP A77E6 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77E6 DATED MAY 1, 2006 - PAGE 53 OF THE STANDARD PLANS BOOK DATED MAY 2006.



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JUNE 6, 2008

PLANS APPROVAL DATE
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POST MILES SHEET TOTAL TOTAL PROJECT NO. SHEETS

ROUTE

To accompany plans dated _

COUNTY

NOTES:

- 1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- 2. Guard rail post spacing to be $6^\prime\text{--}3^{\prime\prime}$ center to center, except as otherwise noted.
- 3. Except as noted, line posts are $6" \times 8" \times 6'-0"$ wood with $6" \times 8" \times 1'-2"$ wood blocks. W6 \times 9 steel posts, 6'-0" in length, with $6" \times 8" \times 1'-2"$ notched wood blocks or plastic blocks may be used for $6" \times 8" \times 1'-2"$ wood posts with $6" \times 8" \times 1'-2"$ wood blocks where applicable and when specified.
- 4. Direction of adjacent traffic indicated by \longrightarrow .
- For Transition Railing (Type WB) details for Types 12A and 12B Layouts, see Standard Plan A77J4.
- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- 7. The type of terminal system end treatment to be used will be shown on the Project Plans.
- 8. Dependent on site conditions (embankment height, side slopes, or other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12′-6" with 6′-3" post spacing) between the transition railing and end treatment.

- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- 10. Type 12A or Type 12B Layouts are typically used:
 - a. To the right of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - b. To the left of approaching traffic, at the end of a structure, on two-lane conventional highway where the roadbed width across the structure is less than 40 feet.
 - c. To the right of approaching traffic at the end of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.
 - d. To the right of approaching traffic at the end of the structure on multilane freeways or expressways with decked median on the bridge.
- 11. See Revised Standard Plan RSP A77F3 for typical layout used left of approaching traffic at the ends of each structure on multilane freeways or expressways with separate adjacent or parallel bridges.

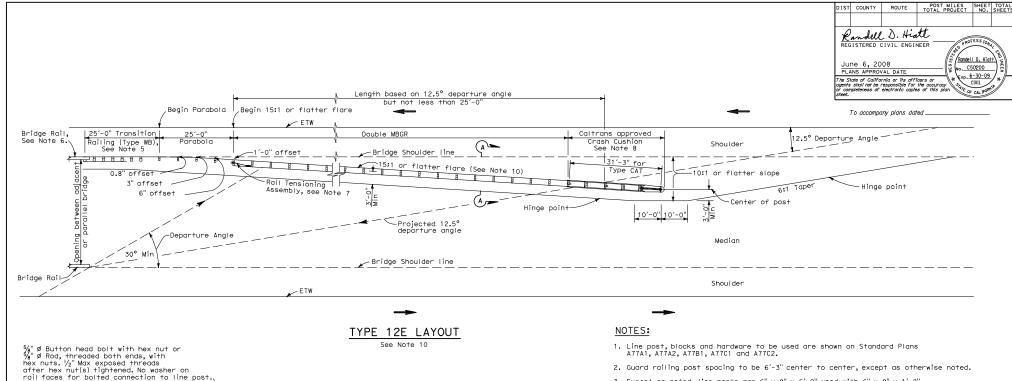
- 12. For additional details of typical connections to bridge rail, see Connection Detail AA on Revised Standard Plans RSP A77JJ and RSP A77J2 and Connection Detail FF on Standard Plans A77K1 and A77K2.
- For additional details of a typical connection to walls or abutments, see Standard Plan A77J3.

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METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR STRUCTURE APPROACH

NO SCALE

RSP A77F1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F1
DATED MAY 1, 2006 - PAGE 54 OF THE STANDARD PLANS BOOK DATED MAY 2006.



Base Line-

TYPICAL PARABOLIC LAYOUT

Top of rail Top of post

wood blocks -

SECTION A-A

TYPICAL DOUBLE METAL

BEAM GUARD RAILING

-Ground line

6" × 8" × 6'-0"

wood post

Begin flare

wx²

Base Line (Edge of paved shoulder or offset line of edge of traveled way)

W = Maximum offset

L = Length of flare PARABOLIC FLARE OFFSETS

Y = Offset from base line

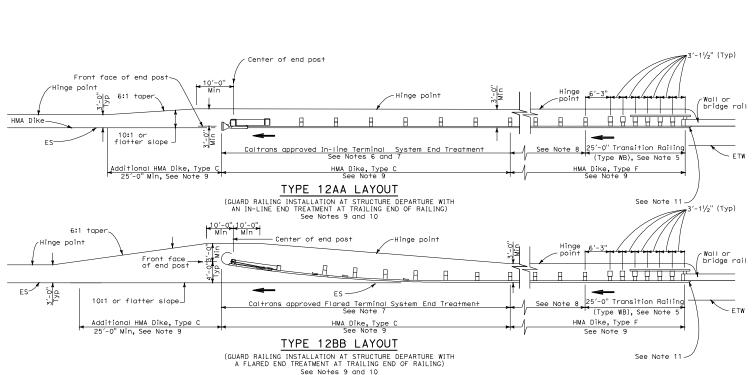
X = Distance along base line

- 3. Except as noted, line posts are 6" \times 8" \times 6'-0" wood with 6" \times 8" \times 1'-2" wood blocks. W6 \times 9 steel posts, 6'-0" in length, with 6" \times 8" \times 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" \times 8" \times 6'-0" wood line posts with 6" \times 8" \times 1'-2" wood blocks where applicable and when specified.
- 4. Direction of adjacent traffic indicated by
- 5. For Transition Railing (Type WB) details, see Standard Plan A77J4.
- 6. For additional details of a typical connection to bridge rail, see Connection Detail AA on Revised Standard Plan RSP A77J1.
- 7. For Rail Tensioning Assembly details, see Standard Plan A77H2.
- 8. The type of Crash Cushion to be used will be shown on the Project Plans.
- 9. Type 12E Layout is typically used left of approaching traffic at the end of each structure on multilane freeways or expressways where a median type barrier is not constructed between separated roadbeds.
- 10. The 15:1 or flatter flare is measured off of the edge of traveled way.

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR STRUCTURE APPROACH

RSP A77F3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F3 DATED MAY 1, 2006 - PAGE 56 OF THE STANDARD PLANS BOOK DATED MAY 2006.



REGISTERED CIVIL ENGINEER June 6, 2008 PLANS APPROVAL DATE The State of Colifornia or its orticors or openis shall not be responsible for the occurred or completeness of electronic capies of this barn To accompany plans dated To accompany plans dated

COUNTY

POST MILES SHEET TOTAL TOTAL PROJECT NO. SHEETS

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- 2. Guard rail post spacing to be $6^\prime\text{--}3^{\prime\prime}$ center to center, except as otherwise noted.
- 3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 6" x 8" x 1-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- 4. Direction of adjacent traffic indicated by
- For Transition Railing (Type WB) details for Types 12AA and 12BB Layouts, see Standard Plan A77J4.
- In-line Terminal System Treatments are used where site conditions will not accommodate a flared end treatment.
- 7. The type of terminal system to be used will be shown on the Project Plans.

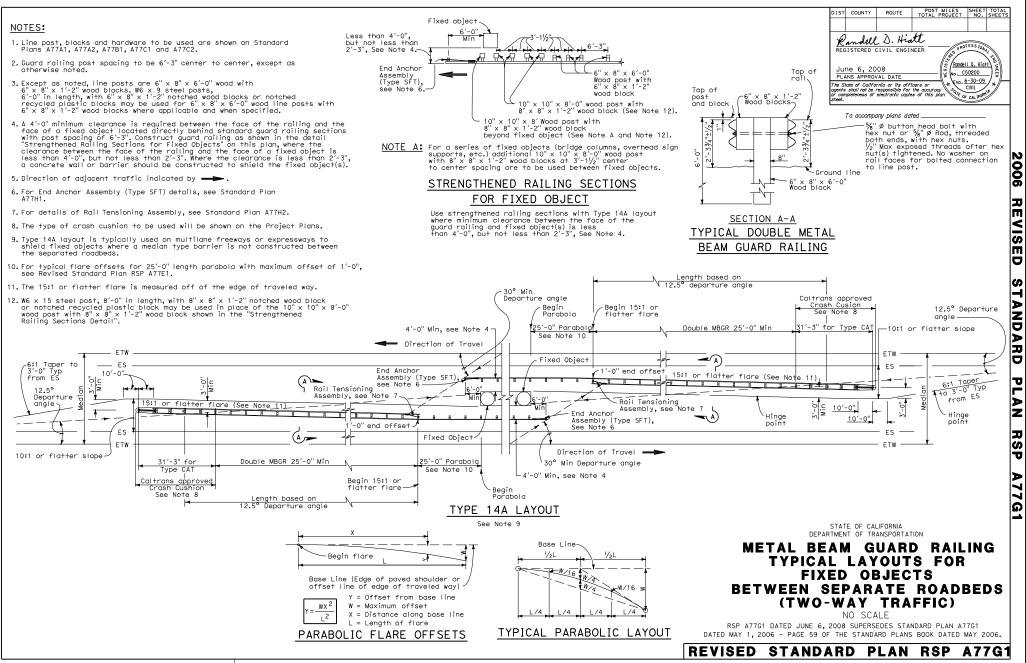
- Dependent on site conditions (embankment height, side slopes, other fixed objects), it may be advisable to construct additional guard railing (a length equal to multiples of 12'-6" with 6'-3" post spacing) between the transition railing and end treatments.
- Where placement of dike is required with guard railing installations, see Revised Standard Plan RSP A77C4 for dike positioning details.
- 10. Type 12AA or Type 12BB Layouts are typically used to the right of traffic departing a structure on two-way conventional highways where the roadbed width across the structure is less than 40 feet.
- 11. For additional details of typical connections to bridge rail, see Connection Detail CC on Revised Standard Plan RSP A77J2 and Connection Detail HH on Standard Plans A77K2.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR STRUCTURE DEPARTURE

NO SCALE

RSP A77F4 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77F4
DATED MAY 1, 2006 - PAGE 57 OF THE STANDARD PLANS BOOK DATED MAY 2006.



NOTES:

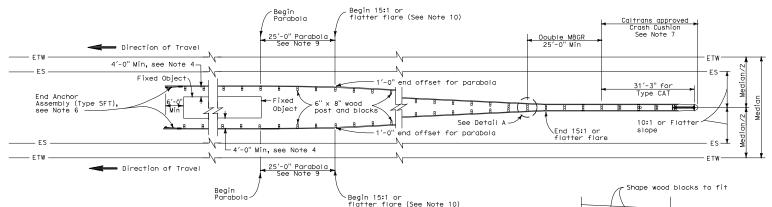
- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- 2. Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- Except as noted, line posts are 6" \times 8" \times 6'-0" wood with 6" \times 8" \times 1'-2" wood blocks. W6 \times 9 steel posts, 6'-0" in length, with 6" \times 8" \times 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" \times 8" \times 6'-0" wood line posts with 6" \times 8" \times 1'-2" wood blocks where applicable and when specified.
- 4. A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing section with post spacing of 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- 5. Direction of adjacent traffic indicated by ----.

- 6. For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- 7. Type of crash cushion to be used will be shown on the Project Plans.
- 8. Type 15A layout is typically used on multilane freeways or expressways to shield fixed objects in the area between separated one-way roadbeds.
- 9. For typical flare offsets for 25′-0" length parabola with maximum offset of 1′-0", see Revised Standard Plan RSP A77E1.
- 10. The 15:1 or flatter flare is measured off of the edge of the traveled way.
- 11. W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8" 0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Ralling Sections Detail".

COUNTY POST MILES SHEET TOTAL TOTAL PROJECT NO. SHEETS Randell D. Hiatt REGISTERED CIVIL ENGINEER Randell D. Hight June 6, 2008 No. C50200 PLANS APPROVAL DATE Exp. 6-30-09 The State of California or its afficers or agents shall not be responsible for the accuracy or completeness of electronic copies of this pla CIVIL

OF CAL IFOR

To accompany plans dated.



TYPE 15A LAYOUT

See Note 9

Begin flare

wx2

Base Line (Edge of paved shoulder or offset line of edge of traveled way)

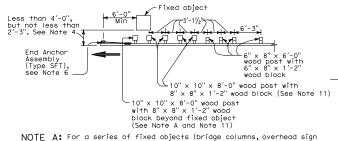
W = Maximum offset

L = Length of flare

PARABOLIC FLARE OFFSETS

Y = Offset from base line

X = Distance along base line

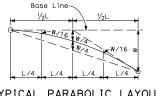


supports, etc.) additional 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood blocks at $3'-1\frac{1}{2}$ " center to center spacing are to be used between fixed objects.

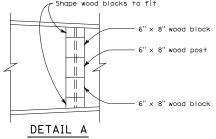
STRENGTHENED RAILING SECTIONS

FOR FIXED OBJECT

Use strengthened railing sections with Type 15A layout where minimum clearance between the face of the guard railing and the fixed object(s) is less than 4'-0", but not less than 2'-3".



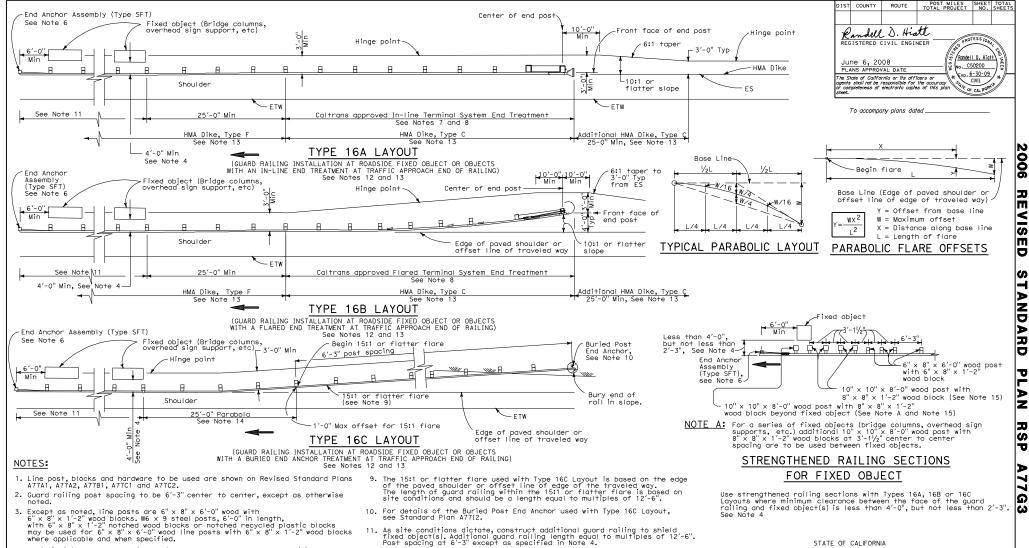
TYPICAL PARABOLIC LAYOUT



STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR FIXED OBJECTS BETWEEN SEPARATE ROADBEDS (ONE-WAY TRAFFIC)

RSP A77G2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G2 DATED MAY 1, 2006 - PAGE 60 OF THE STANDARD PLANS BOOK DATED MAY 2006.



DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

COUNTY

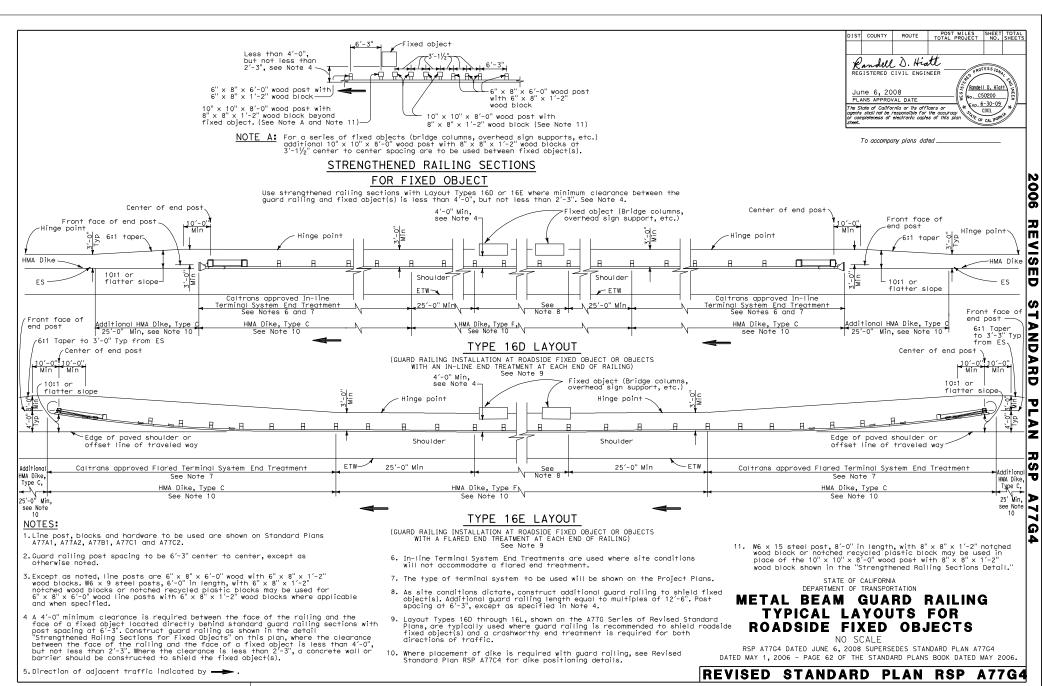
RSP A77G3 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G3 DATED MAY 1, 2006 - PAGE 61 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G3

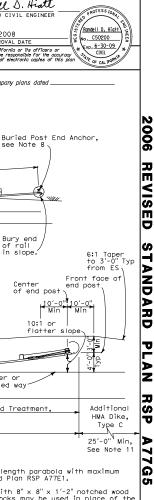
- 5. Direction of adjacent traffic indicated by 6. For End Anchor Assembly (Type SFT) details, see Standard Plan A77H1.
- 7. In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- 8. The type of terminal system to be used will be shown on the Project Plans.

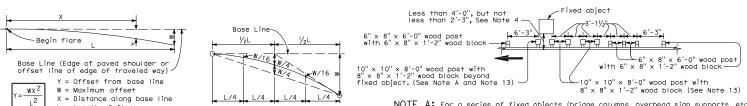
4. A 4'-0" minimum clearance is required between the face of the railing and the

- 12. Layout Types 16A, 16B or 16C are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for only one direction of traffic.
- Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- 14. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- 15. W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".



....





WITH A FLARED END TREATMENT AND

TYPICAL PARABOLIC LAYOUT

 $\frac{\text{NOTE A:}}{\text{additional 10"}} \text{ for a series of fixed objects (bridge columns, overhead sign supports, etc.)} \\ \frac{\text{additional 10"} \times \text{ 10"} \times \text{ 8"-0" wood post with 8"} \times \text{ 8"} \times \text{ 1"-2" wood blocks at 3"-11/2" center to center spacing are to be used between fixed object(s).}$

Randell D. Hiatt REGISTERED CIVIL ENGINEER June 6, 2008 PLANS APPROVAL DATE The State of California or its officers or agents shall not be responsible for the accuracy or completeness of electronic copies of this pla

POST MILES SHEET TOTAL TOTAL PROJECT NO. SHEETS

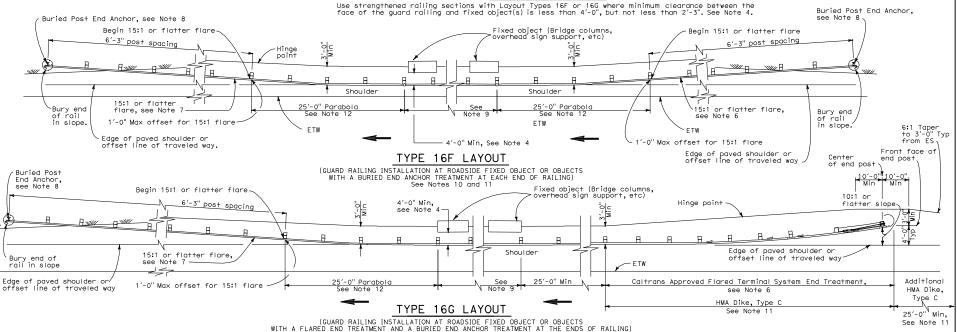
ROUTE

To accompany plans dated.

COUNTY

STRENGTHENED RAILING SECTIONS

FOR FIXED OBJECT



NOTES:

- 1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- 2. Guard railing post spacing to be 6'-3'' center to center, except as
- 3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-2" wood blocks. W6 x 9 steel posts, 6'-0" in length, with 8" x 8" x 1'-2" notched wood blocks or notched recycled plastic blocks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-2" wood blocks where applicable and when specified.
- 4 A 4'-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3". a concrete wall or barrier should be constructed to shield the fixed object(s).
- 5. Direction of adjacent traffic indicated by ----

L = Length of flare

PARABOLIC FLARE OFFSETS

6. The type of terminal system to be used will be shown on the Project Plans.

See Notes 10 and 11

- 7. The 15:1 or flatter flare for the buried post anchor is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6".
- 8. For details of the Buried Post End Anchor details, see Standard Plan A7712.
- 9. As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
- 10. Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans, are typically used on highways where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- 11. Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.

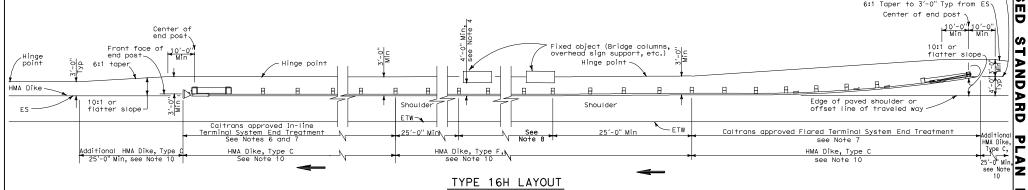
- 12. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard Plan RSP A77E1.
- 13. W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" x 10" x 8'-0" wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

NO SCALE

RSP A77G5 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G5 DATED MAY 1, 2006 - PAGE 63 OF THE STANDARD PLANS BOOK DATED MAY 2006.



(GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS WITH A FLARED END TREATMENT AND AN IN-LINE TREATMENT AT THE ENDS OF RAILING) See Note 9

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- 2. Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- 3. Except as noted, line posts are $6" \times 8" \times 6'-0"$ wood with $6" \times 8" \times 1'-2"$ wood blocks. W6 \times 9 steel posts, 6'-0" in length, with $6" \times 8" \times 1'-2"$ notched wood blocks or notched recycled plastic blocks may be used for $6" \times 8" \times 6'-0"$ wood posts with $6" \times 8" \times 1'-2"$ wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the A 4-0" minimum clearance is required between the face of the railing and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3". Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- 5. Direction of adjacent traffic indicated by \longrightarrow .

- In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
- 7. The type of terminal system to be used will be shown on the Project Plans.
- As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12"-6". Post spacing at 6"-3", except as specified in Note 4.
- Layout Types 16D through 16L, shown on the A776 Series of Revised Standard PLans, typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
- 10. Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
- 11. W6 x 15 steel post, 8'-0" in length, with 8" x 8" x 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the $10"\times 10"\times 8'-0"$ wood post with 8" x 8" x 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

RSP A77G6 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G6 DATED MAY 1, 2006 - PAGE 64 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77G6

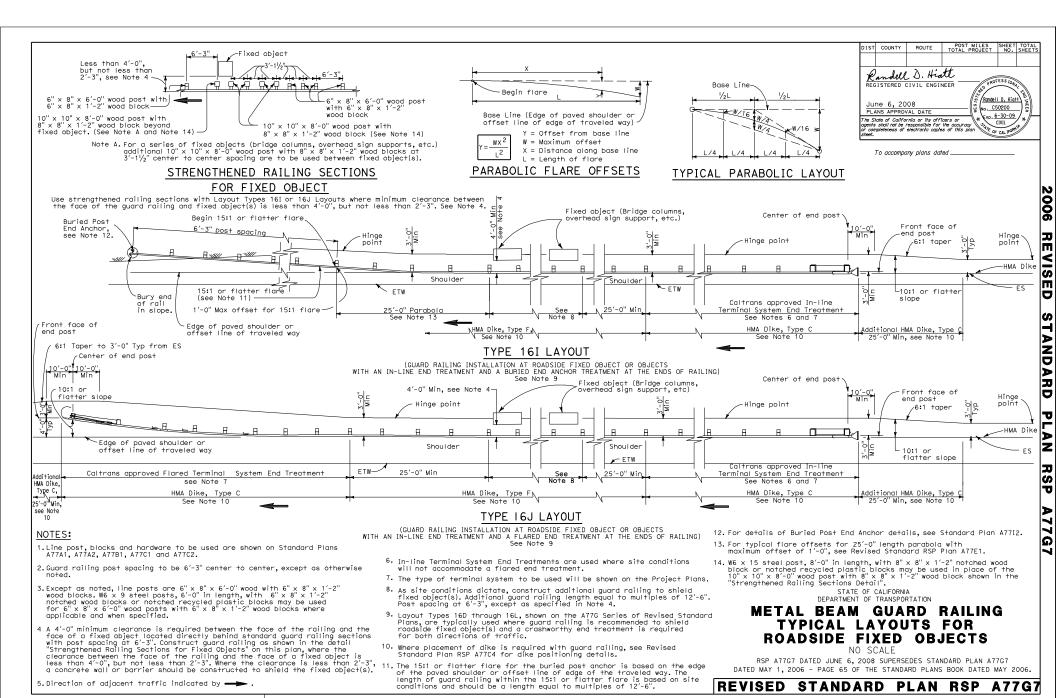
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ANDARD

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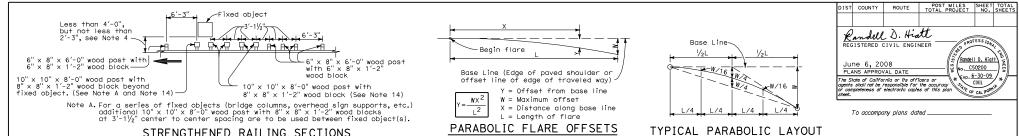
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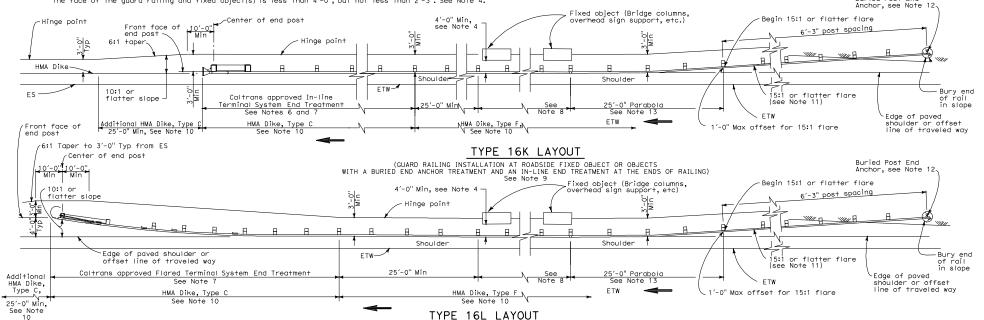




STRENGTHENED RAILING SECTIONS

FOR FIXED OBJECT

Use strengthened railing sections with Layout Types 16K or 16L Layouts where minimum clearance between the face of the guard railing and fixed object(s) is less than 4'-0", but not less than 2'-3". See Note 4.



NOTES:

10

- 1. Line post, blocks and hardware to be used are shown on Standard Plans A77A1, A77A2, A77B1, A77C1 and A77C2.
- Guard railing post spacing to be 6'-3" center to center, except as otherwise noted.
- 3. Except as noted, line posts are $6" \times 8" \times 6' 0"$ wood with $6" \times 8" \times 1' 2"$ wood blocks. W6 \times 9 steel posts, 6' 0" in length, with $6" \times 8" \times 1' 2"$ notched wood blocks or notched recycled plastic blocks may be used for $6" \times 8" \times 6' 0"$ wood posts with $6" \times 8" \times 1' 2"$ wood blocks where applicable and when specified.
- A 4'-0" minimum clearance is required between the face of the railing and the A 4-0" minimum clearance is required between the face of the rolling and the face of a fixed object located directly behind standard guard railing sections with post spacing at 6'-3". Construct guard railing as shown in the detail "Strengthened Railing Sections for Fixed Objects" on this plan, where the clearance between the face of the railing and the face of a fixed object is less than 4'-0", but not less than 2'-3", Where the clearance is less than 2'-3", a concrete wall or barrier should be constructed to shield the fixed object(s).
- 5. Direction of adjacent traffic indicated by ----.

- (GUARD RAILING INSTALLATION AT ROADSIDE FIXED OBJECT OR OBJECTS
 WITH A BURIED END ANCHOR TREATMENT AND A FLARED END TREATMENT AT THE ENDS OF RAILING) See Note 9
 - In-line Terminal System End Treatments are used where site conditions will not accommodate a flared end treatment.
 - 7. The type of terminal system to be used will be shown on the Project Plans.
 - 8. As site conditions dictate, construct additional guard railing to shield fixed object(s). Additional guard railing length equal to multiples of 12'-6". Post spacing at 6'-3", except as specified in Note 4.
 - Layout Types 16D through 16L, shown on the A77G Series of Revised Standard Plans are typically used where guard railing is recommended to shield roadside fixed object(s) and a crashworthy end treatment is required for both directions of traffic.
 - 10. Where placement of dike is required with guard railing, see Revised Standard Plan RSP A77C4 for dike positioning details.
 - . The 15:1 or flatter flare for the buried post anchor is based on the edge of the paved shoulder or offset line of edge of the traveled way. The length of guard railing within the 15:1 or flatter flare is based on site conditions and should be a length equal to multiples of 12'-6'.

- 12. For details of Buried Post End Anchor details, see Standard Plan A7712.
- 13. For typical flare offsets for 25'-0" length parabola with maximum offset of 1'-0", see Revised Standard RSP Plan A77E1.
- 14. W6 \times 15 steel post, 8'-0" in length, with 8" \times 8" \times 1'-2" notched wood block or notched recycled plastic blocks may be used in place of the 10" \times 10" \times 8'-0" wood post with 8" \times 8" \times 1'-2" wood block shown in the "Strengthened Railing Sections Detail".

STATE OF CALIFORNIA

Buried Post End

DEPARTMENT OF TRANSPORTATION

METAL BEAM GUARD RAILING TYPICAL LAYOUTS FOR ROADSIDE FIXED OBJECTS

RSP A77G8 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77G8 DATED MAY 1, 2006 - PAGE 66 OF THE STANDARD PLANS BOOK DATED MAY 2006.

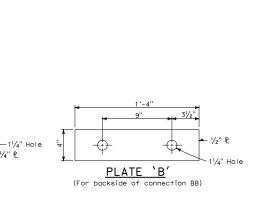
REVISED STANDARD PLAN RSP A77G8



To accompany plans dated.

NOTES:

- 1. See Revised Standard Plan RSP A77J2 for additional connection details to bridges without sidewalks.
- 2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
- 3. Direction of adjacent traffic indicated by
- 4. For additional details of Transition Railing (Type WB), see Standard Plan A77J4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge railing.
- 5. For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
- 6. For typical use of Connection Detail BB, see Layout Type 12D (structure departure railing connection) on Standard Plan A77F2 and Layout Type 12DD on Standard Plan A77F5.
- 7. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam rail.
- 8. For details of End Cap (Type TC), see Standard Plan A77J4.
- 9. See Standard Plan A77J4 for additional details regarding depth dimension for straight metal box spacer.



1" Galv HS bolts

with washers and

nuts, Total 4

Vertical

Face-

PLAN

ELEVATION

GUARD RAILING CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

Straight metal box spacer, see Details A and B and Note 9

CONNECTION DETAIL BB

See Notes 6

11/4" Ø Galv pipe or PVC pipe

sleeve or 11/4" drilled holes-

MBGR

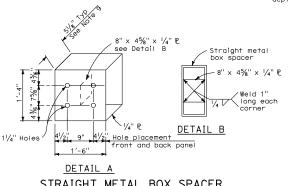
1'-2"

PLATE 'A

'Galv HS bolt with washers and nuts

-End Cap (Type A)

— Bridge Railing



Thrie beam

rail element

Transition railing (Type WB) See Note 4

11/4" Ø Galv pipe or PVC pipe sleeve or 11/4" drilled holes

-10" x 10" x 8'-0" Wood post

3'-11/2

'A' front and back

- FG

of bolted connection, total 4

8" × 8" × 1'-10"

Wood block-

3'-11/2' Тур

4:1, See Note 7.

CONNECTION DETAIL AA

See Notes 5

41/2"

End Cap (Type TC)

See Note 8

STRAIGHT METAL BOX SPACER

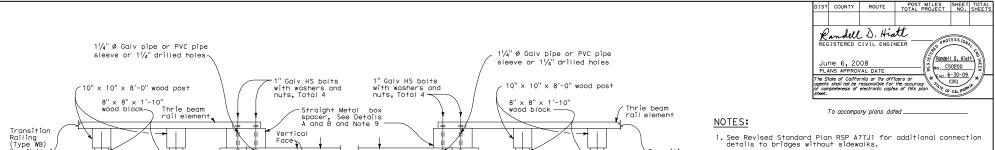
STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

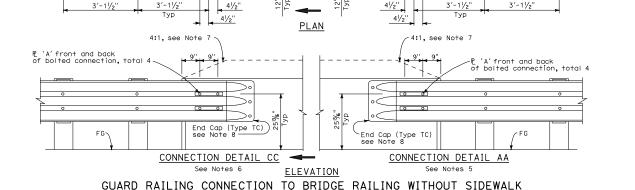
METAL BEAM GUARD RAILING **CONNECTIONS TO BRIDGE RAILINGS** WITHOUT SIDEWALKS **DETAILS No.1**

NO SCALE

RSP A77J1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J1 DATED MAY 1, 2006 - PAGE 72 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77J1





See Note 4

- 1. See Revised Standard Plan RSP A77J1 for additional connection details to bridges without sidewalks.
- 2. Additional details of posts, blocks and hardware are shown on Standard Plan A77B1, A77C1 and A77C2.
- 3. Direction of adjacent traffic indicated by ----
- 4. For additional details of Transition Railing (Type WB), see Standard Plan AT7U4. Transition Railing (Type WB) transitions the 12 gage w-beam standard railing section of guard railing to a heavier gage nested thrie beam railing section which is connected to the concrete bridge
- For typical use of Connection Detail AA, see Layout Types 12A and 12B on Revised Standard Plan RSP A77F1, Layout Types 12C and 12D on Standard Plan A77F2, and Layout Type 12E on Revised Standard Plan RSP A77F3.
- 6. For typical use of Connection Detail CC, see Layout Types 12AA and 12BB on Standard Plan A77F4 and Layout Type 12CC on Standard Plan A77F5.
- 7. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail AA and connection Detail CC, taper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
- 8. For details of End Cap (Type TC), see Standard Plans A77J4.

Transition Railing (Type WB) See Note 4

See Standard Plans A77J4 for additional details regarding depth dimension for straight metal box spacer.

8" × 4%" × 1/4" ₽ See Detail B Straight metal box spacer 9" 8" × 45%" × 1/4" PL 11/4" hole 'Weld 1" long each **4** 1/4" ₽ PLATE 'A 11/4" hole PLATE 'B DETAIL B (For backside of connection BB) /2" Hole placement 11/4" Holes front and back panel

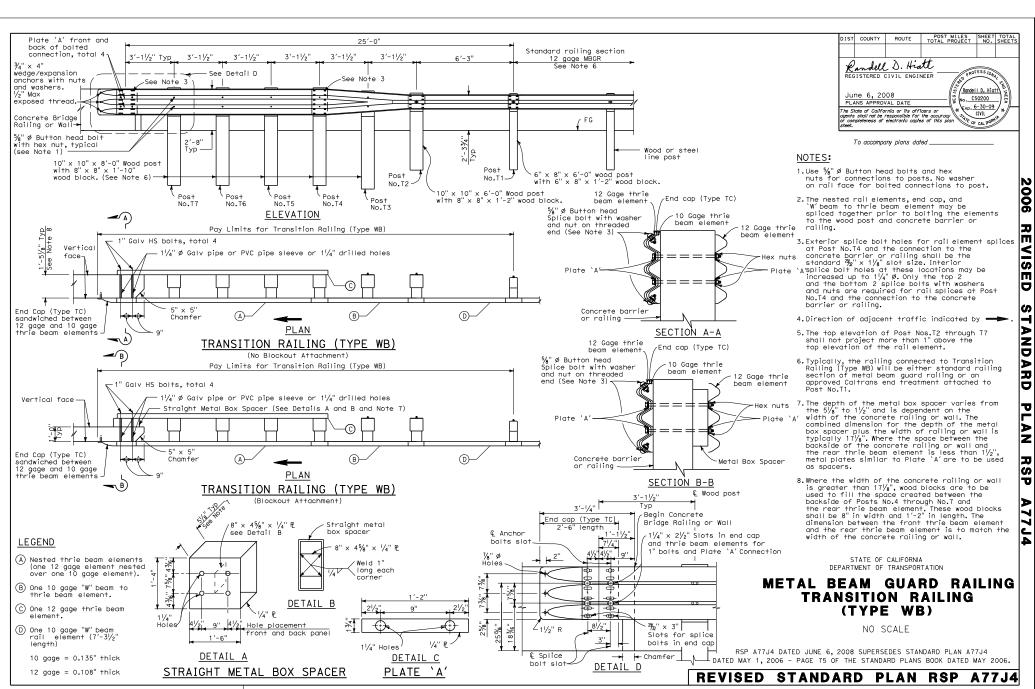
> DETAIL A STRAIGHT METAL BOX SPACER

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

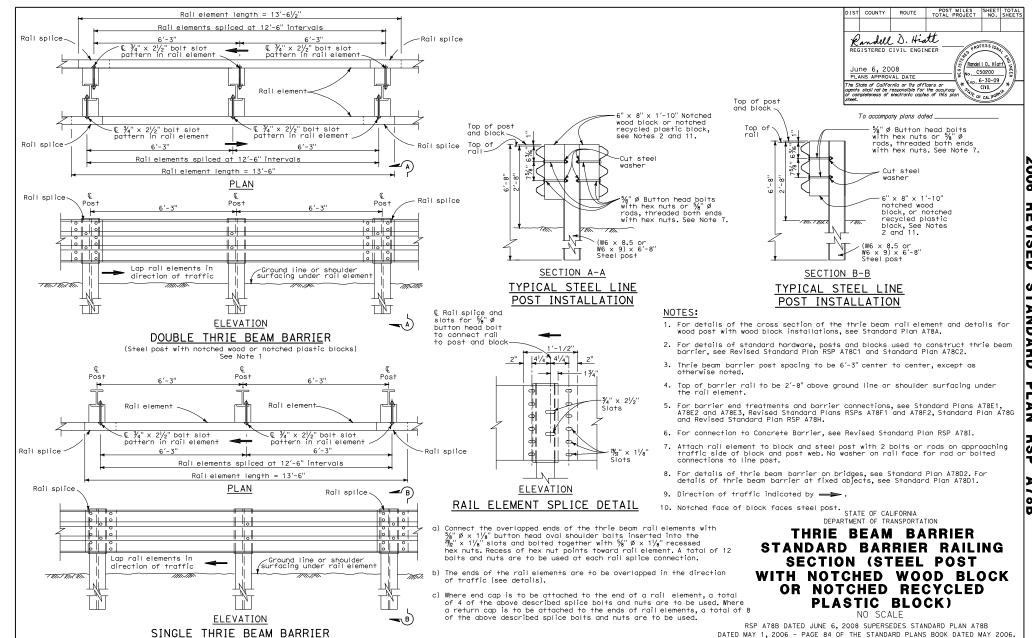
METAL BEAM GUARD RAILING CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS DETAILS No.2

RSP A77J2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A77J2 DATED MAY 1, 2006 - PAGE 73 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A77J2







(Steel post with notched wood or notched plastic blocks)

See Note 1

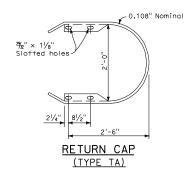
A78B

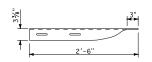
DATED MAY 1, 2006 - PAGE 84 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP

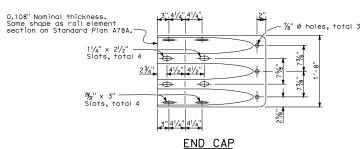
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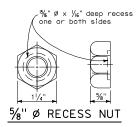
To accompany plans dated ____

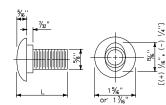




(TYPE TC)







%" Ø BUTTON HEAD BOLT

L	THREAD LENGTH
1 1/4"	full thread length
2"	full thread length
91/2"	4" Min thread length
18"	4" Min thread length

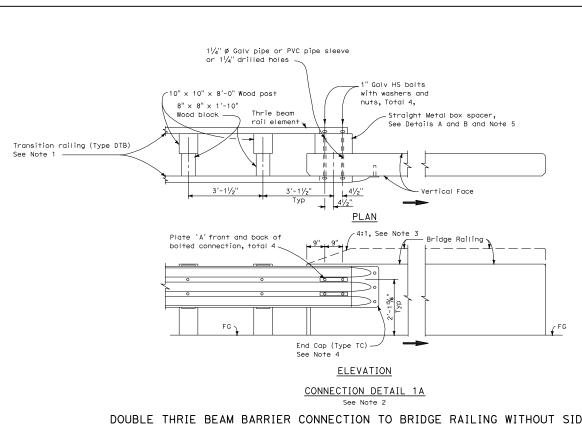
STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

THRIE BEAM BARRIER STANDARD HARDWARE DETAILS

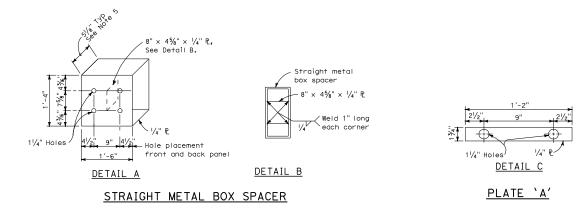
NO SCALE

RSP A78C1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A78C1 DATED MAY 1, 2006 - PAGE 85 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A78C1



DOUBLE THRIE BEAM BARRIER CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK



POST MILES SHEET TOTAL TOTAL PROJECT NO. SHEETS DIST COUNTY ROUTE Randell D. Hiatt REGISTERED CIVIL ENGINEER Randell D. Higtt June 6, 2008 PLANS APPROVAL DATE No. C50200 Exp. 6-30-09 The State of California or its afficers or agents shall not be responsible for the accuracy or completeness of electronic copies of this pla CIVIL OF CAL IFOR

To accompany plans dated.

NOTES:

- 1. For additional details of Transition Railing (Type DTB), see Standard Plans A78K. Transition Railing (Type DTB) transitions the standard 12 gage double thrie beam barrier to a heavier gage double thrie beam barriers etcling section then to a heavier gage nested double thrie beam barrier section which then is connected to the concrete bridge railing.
- For typical use of Connection Detail 1A, see Type 25A Connection Layout on Revised Standard Plan RSP A78H.
- 3. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail 1A, toper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
- 4. For details of End Cap (Type TC), see Standard Plan A78C1.
- 5. See Standard Plan A78K for additional details regarding depth dimension for straight metal box spacer.
- 6. Direction of adjacent traffic indicated by -----

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

DOUBLE THRIE BEAM BARRIER **CONNECTION TO BRIDGE RAILINGS** WITHOUT SIDEWALKS

NO SCALE

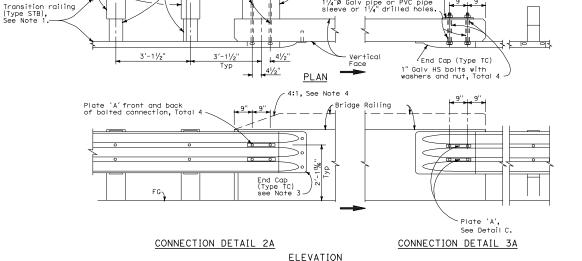
RSP A78F1 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A78F1 DATED MAY 1, 2006 - PAGE 92 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A78F1



Plate 'B', Total 2, see Detail D.

- 1. For additional details of Transition Railing (Type STB), see Standard Plans A78J. Transition Railing (Type STB) transitions the standard 12 gage single thrie beam barrier to a heavier gage single thrie beam railing section then to a heavier gage nested double thrie beam barrier section which then is connected to the concrete bridge railing.
- 2. Where the height of the bridge railing exceeds the height of the thrie beam railing by more than 1" at Connection Detail 2A, toper the top of the end of the bridge railing at 4:1 to match the top elevation of the thrie beam railing.
- 3. For details of End Cap (Type TC), see Standard Plan A78C1.
- See Standard Plan A78J for additional details regarding depth dimension for straight metal box spacer.
- 5. Direction of adjacent traffic indicated by ->-.



Straight Metal box spacer

see Details A and B and Note 4.

11/4"Ø Galv pipe or PVC pipe
sleeve or 11/4" drilled holes.

Wood block-

 $8" \times 4\frac{5}{8}" \times \frac{1}{4}"$ P., See Detail B.

STRAIGHT METAL BOX SPACER

Thrie beam

rail element

SINGLE THRIE BEAM BARRIER CONNECTION TO BRIDGE RAILING WITHOUT SIDEWALK

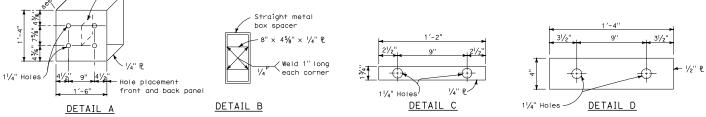


PLATE 'A'

PLATE 'B'

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SINGLE THRIE BEAM BARRIER CONNECTIONS TO BRIDGE RAILINGS WITHOUT SIDEWALKS

NO SCALE

RSP A78F2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A78F2 DATED MAY 1, 2006 - PAGE 93 OF THE STANDARD PLANS BOOK DATED MAY 2006.

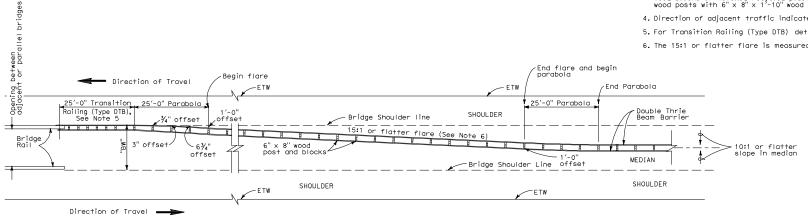
REVISED STANDARD PLAN RSP A78F2

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To accompany plans dated.

NOTES:

- Line post, blocks and hardware to be used are shown on Standard Plans A78A, A78B, A78C1, and A78C2.
- 2. Post spacing to be 6'-3" center to center, except as otherwise noted.
- 3. Except as noted, line posts are 6" x 8" x 6'-0" wood with 6" x 8" x 1'-10" wood blacks. (W6 x 9) steel posts, 6'-8" in length, with 6" x 8" x 1'-10" notched wood blacks ar notched recycled plastic blacks may be used for 6" x 8" x 6'-0" wood posts with 6" x 8" x 1'-10" wood blacks where applicable and when specified.
- 4. Direction of adjacent traffic indicated by ----
- 5. For Transition Railing (Type DTB) details, see Standard Plan A78K.
- 6. The 15:1 or flatter flare is measured off of the edge of traveled way.



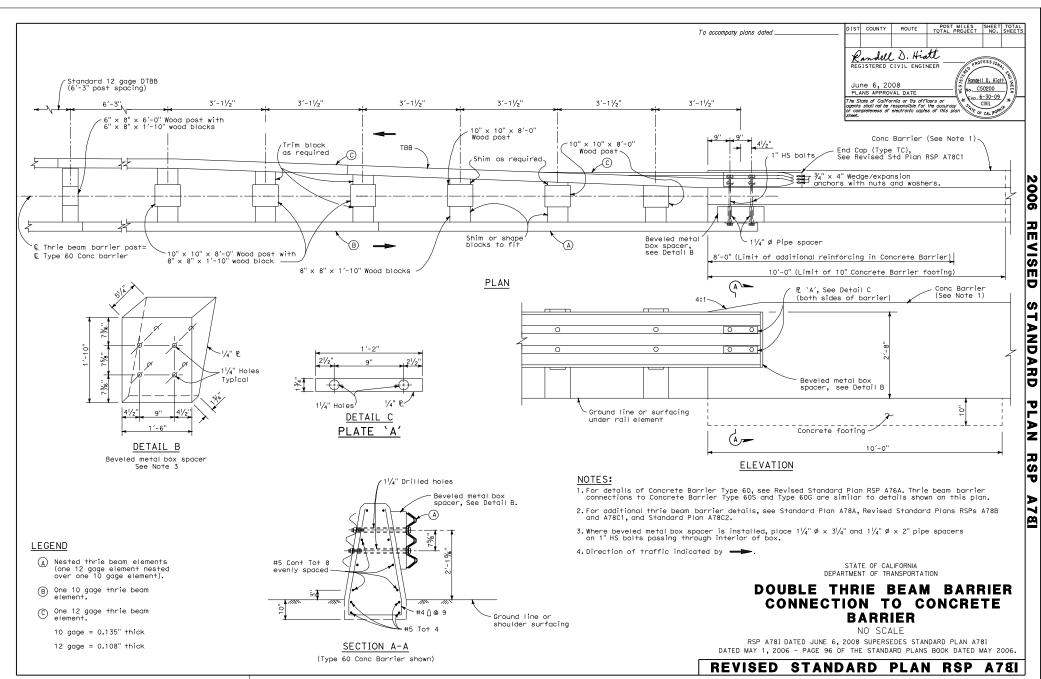
TYPE 25A CONNECTION LAYOUT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

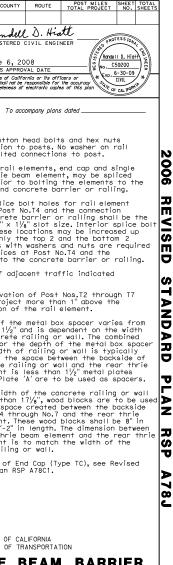
THRIE BEAM BARRIER TYPICAL LAYOUT FOR CONNECTION TO **BRIDGE RAILING**

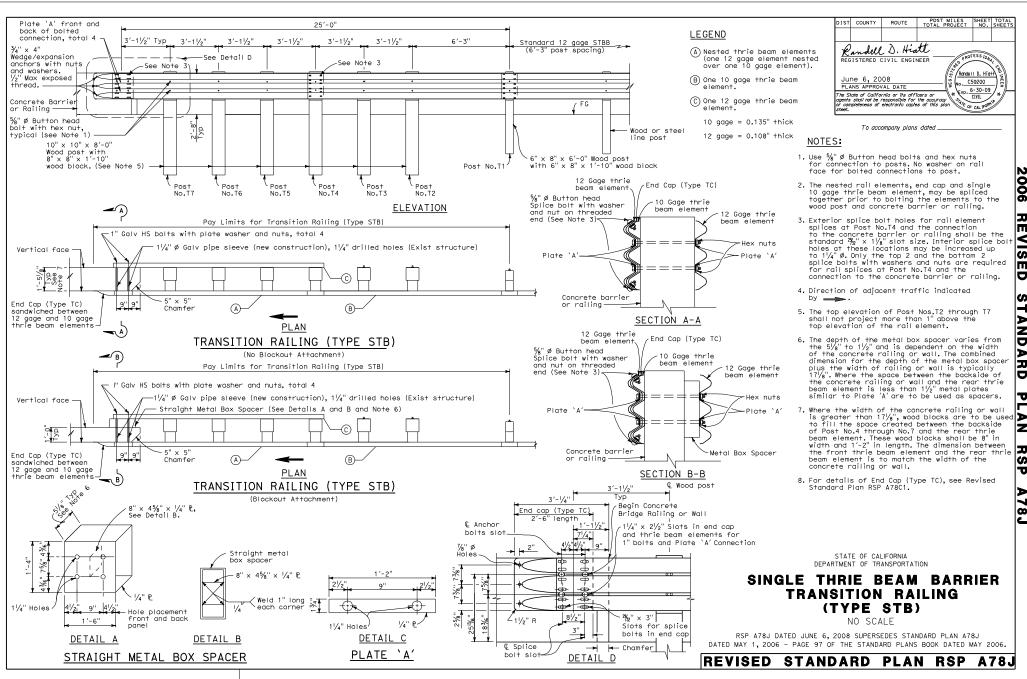
RSP A78H DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A78H DATED MAY 1, 2006 - PAGE 95 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A78H

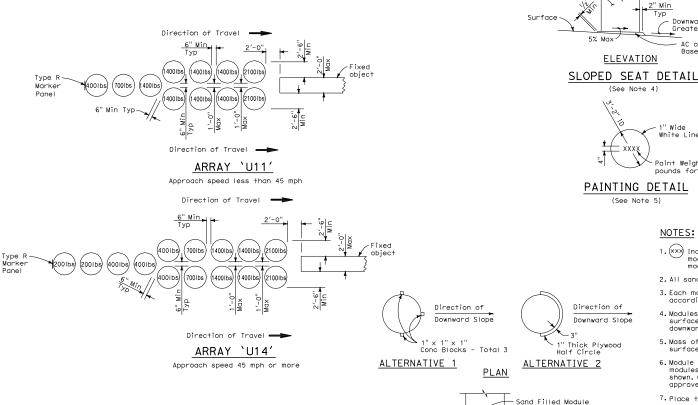


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Surface

shown

Plywood Blocking for Alternative 2

ELEVATION

BRIDGE DECK MODULE BLOCKING DETAILS

(See Note 6)

POST MILES SHEET TOTAL TOTAL PROJECT NO. SHEET COUNTY Randell D. Hiatt REGISTERED CIVIL ENGINEER Randell D. Hiatt June 6, 2008 C50200 PLANS APPROVAL DATE Exp. 6-30-09 The State of California or its afficers or agents shall not be responsible for the accuracy or completeness of electronic copies of this pic CIVIL

To accompany plans dated

NOTES:

1" Wide White Line

Sand Filled Module

Downward Slope 5% Max

- 1. (xxx) Indicates module location and mass of sand in pounds for each module. Module spacing is based on the greater diameter of the modules.
- 2. All sand weights are nominal.

Downward Slope Greater Than 5%

Paint Weight of Sand in

pounds for Each Module

AC or Epoxy Mortar

Base to New Slope

- 3. Each module is to contain amount of sand indicated, supported according to the manufacturer's instructions.
- 4. Modules shall be placed on asphalt concrete, epoxy mortar or concrete surface. Modules to be placed on surfacing with greater than 5% downward slope shall be seated as shown.
- 5. Mass of sand and outline of each module shall be painted on the surface at each module location.
- 6. Module blocking, epoxied to the deck surface, is required for all modules placed on bridge decks. Two acceptable alternatives are shown. Other alternatives recommended by the manufacturer and approved by the Engineer will be accepted.
- 7. Place the top of the Type R marker panel 1" below the module lid.
- 8. Approach speeds indicated conform to NCHRP Report criteria.

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

CRASH CUSHION, SAND FILLED (UNIDIRECTIONAL)

RSP A81A DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A81A DATED MAY 1, 2006 - PAGE 99 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A81A

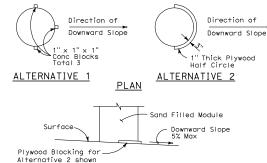




1. (xxx) Indicates module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the

2. All sand weights are nominal.

- 3. Each module is to contain amount of sand indicated, supported according to the manufacturer's instructions.
- 4. Modules shall be placed on asphalt concrete, epoxy mortar or concrete surface. Modules to be placed on surfacing with greater than 5% downward slope shall be seated as shown.
- 5. Mass of sand and outline of each module shall be painted on the surface at each module location.
- 6. Module blocking, epoxied to the deck surface, is required for all modules placed on bridge decks. Two acceptable alternatives are shown. Other alternatives recommended by the manufacturer and approved by the Engineer will be accepted.
- 7. Place the top of the Type R marker panel 1" below the module lid.
- 8. Approach speeds indicated conform to NCHRP Report criteria.



ELEVATION

BRIDGE DECK MODULE BLOCKING DETAILS

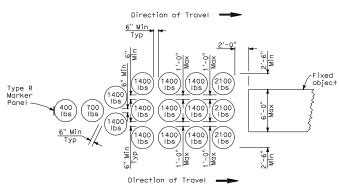
(See Note 6)

DEPARTMENT OF TRANSPORTATION CRASH CUSHION, SAND FILLED (UNIDIRECTIONAL)

STATE OF CALIFORNIA

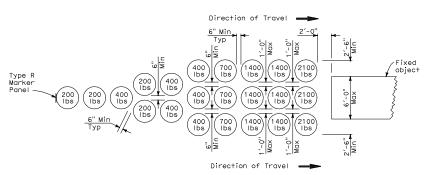
RSP A81B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A81B DATED MAY 1, 2006 - PAGE 100 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A81B



ARRAY 'U16'

Approach speed less than 45 mph



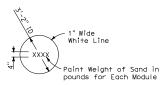
ARRAY 'U21

Approach speed 45 mph or more

Sand Filled Module 2" Min Тур Downward Slope Greater Than 5% AC or Epoxy Mortar Base to New Slope ELEVATION

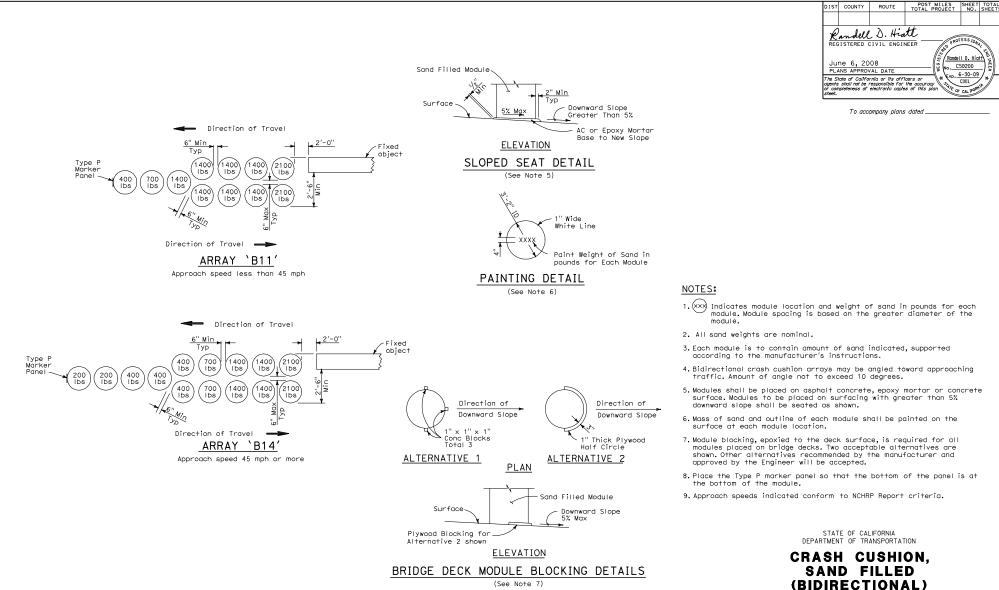
SLOPED SEAT DETAIL

(See Note 4)



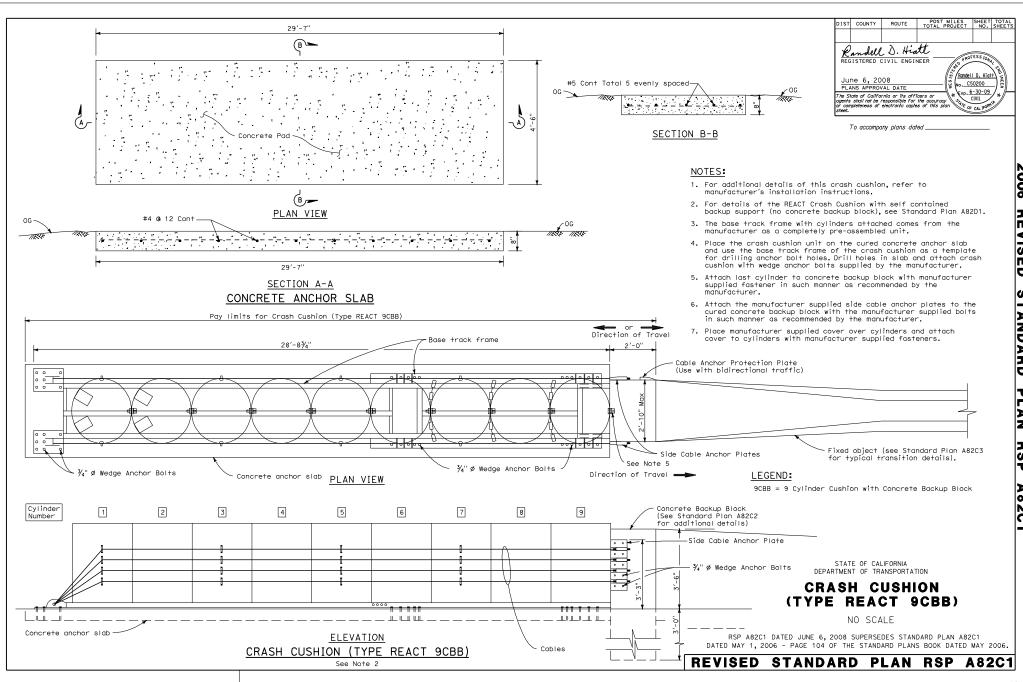
PAINTING DETAIL

(See Note 5)

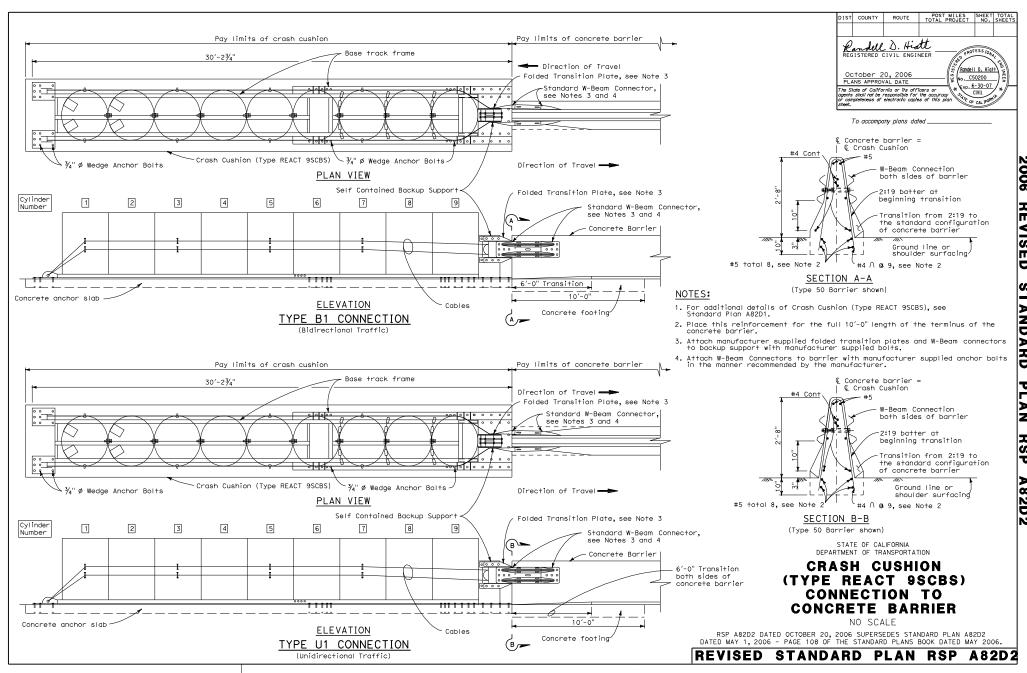


NO SCALE RSP A81C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A81C DATED MAY 1, 2006 - PAGE 101 OF THE STANDARD PLANS BOOK DATED MAY 2006. REVISED STANDARD PLAN RSP A81C

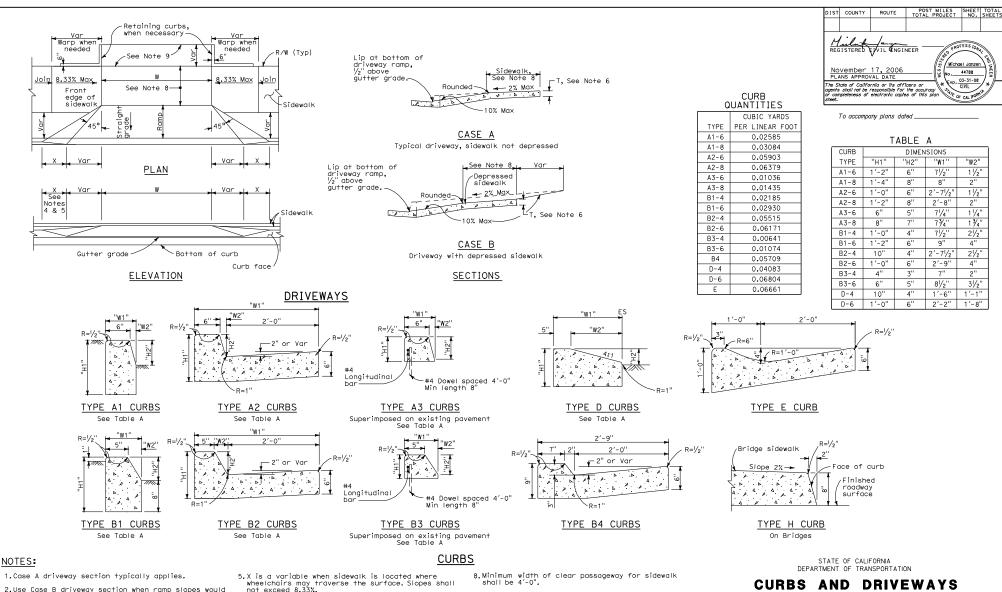












6. Sidewalk and ramp thickness "T" at driveway shall be

for residental and 6" for commercial. 7. Difference in slope of the driveway ramp and the slope of a line between the gutter and a point on the roadway 5'-0" from gutter line shall not exceed 15%. Reduce driveway ramp slope, not

gutter slope, where required.

Retaining curbs and acquisition of construction easement may be necessary for narrow sidewalks or curb heights in excess of 6".

10. Across the pedestrian route at curb ramp locations, the gutter pan slope shall not exceed 1" of depth for each 2'-0" of width.

2.Use Case B driveway section when ramp slopes would exceed 10% in Case A.

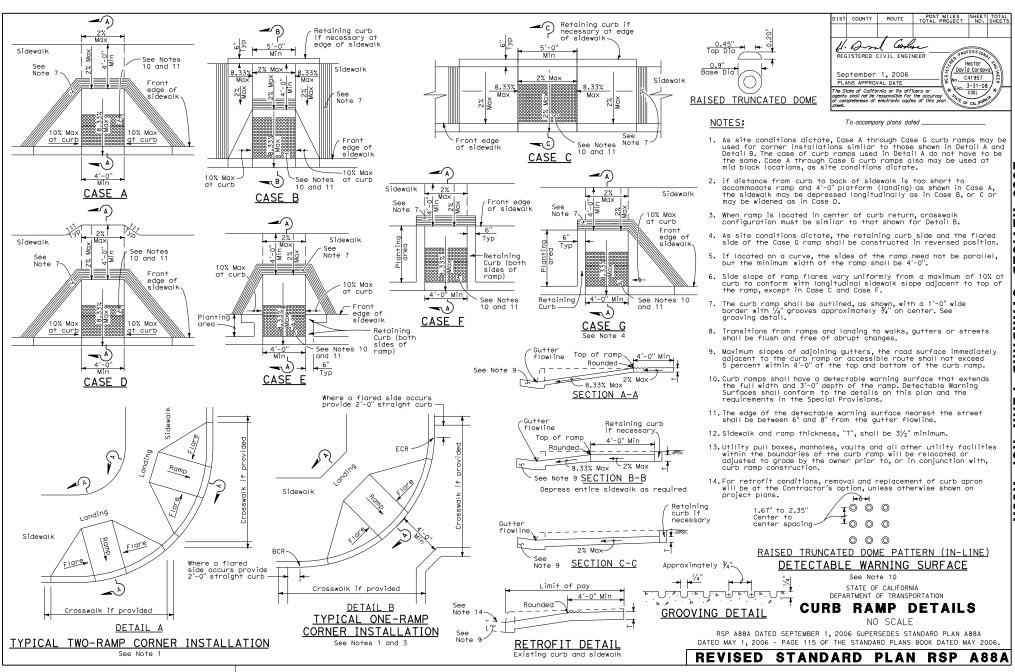
3.Use Case B driveway section when sidewalk cross slope would exceed 2% in Case A.

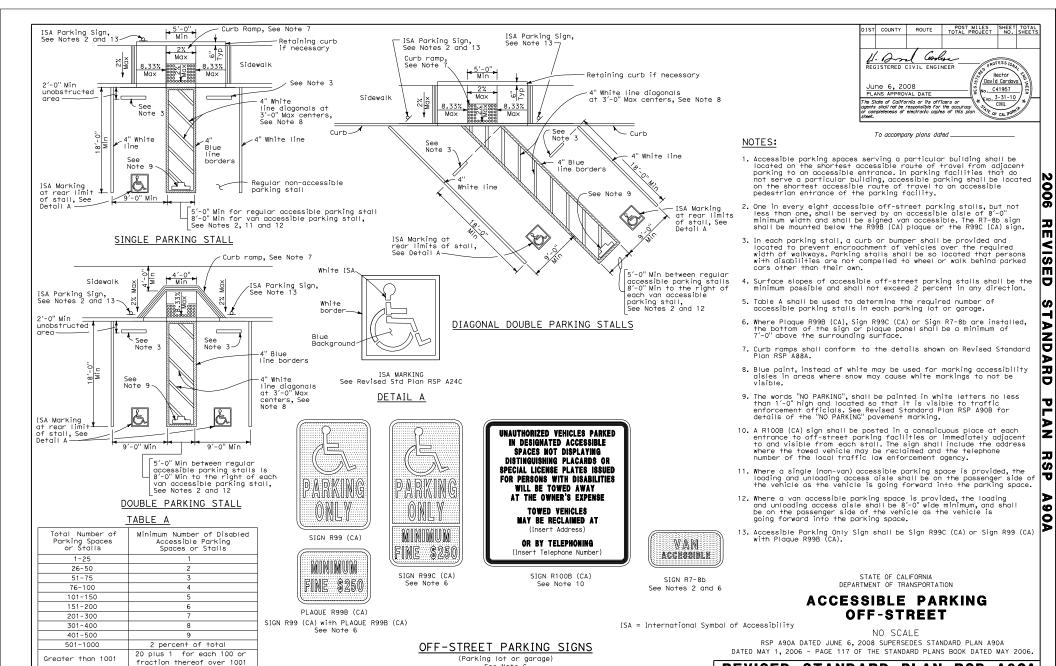
4.X=3'-0" except for curb heights over 10" where 4:1 slopes shall be used on curb slope.

NO SCALE

RSP A87A DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN A87A
DATED MAY 1. 2006 - PAGE 113 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A87A

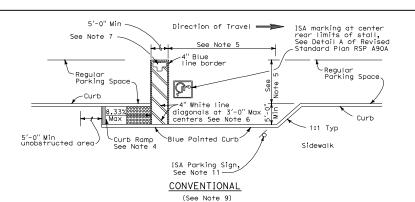


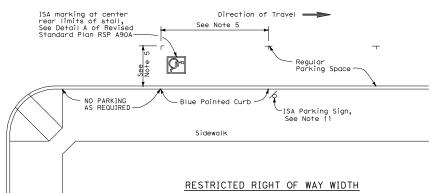


See Note 6

A 9 O A

REVISED STANDARD PLAN RSP





ON-STREET PARKING (Parallel parking) (See Note 10)

PAVEMENT MARKING

See Note 7







PLAQUE R99B (CA) SIGN R99 (CA) with PLAQUE R99B (CA) See Note 3

SIGN R99C (CA)

See Note 3

POST MILES SHEET TOTAL TOTAL PROJECT NO. SHEETS COUNTY ROUTE 0 Costo REGISTERED CIVIL ENGINEER Hector David Cordova June 6, 2008 PLANS APPROVAL DATE No. C41957 The State of California or its afficers or agents shall not be responsible for the accuracy or completeness of electronic copies of this pla CIVIL OF CAL IFOR

To accompany plans dated.

NOTES:

- Parking spaces shall be so located that persons with disabilities are not compelled to wheel or walk behind parked cars other than their own.
- 2. Surface slopes of accessible on-street parking spaces shall be the minimum feasible.
- 3. Where Plaque R99B (CA) or Sign R99C (CA) are installed, the bottom of the sign or plaque panel shall be a minimum of 7'-0" above the surrounding surface.
- 4. Curb ramps shall conform to the details shown on Revised Standard Plan RSP A88A.
- 5. Accessible on-street parking spaces shall not be smaller in length or width than that specified by the local jurisdiction for other parking spaces, but not less than 20'-0" in length and not less than 8'-0" in width.
- Blue paint, instead of white may be used for marking accessibility aisles in areas where snow may cause white markings to not be visible.
- 7. The words "NO PARKING", shall be painted in white letters no less than 1'-0" high on a contrasting background and located so that it is visible to traffic enforcement officials. See Standard Plan A24E for square foot area for painting the words "NO PARKING".
- 8. There shall be no obstructions on the sidewalk adjacent to and for the full length of the parking space, except for the ISA parking sign shown.
- The Conventional detail should be the primary choice of accessible on-street parking. However, if the sidewalk lacks adequate space to construct a standard curb ramp, the Restricted Right of Way detail should be used.
- 10. If the Restricted Right of Way width detail is selected and it conflicts with a bus stop or other uses, this detail may apply to the other end of the block.
- 11. Accessible Parking Only Sign shall be Sign R99C (CA) or Sign R99 (CA) with Plaque R99B (CA).

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

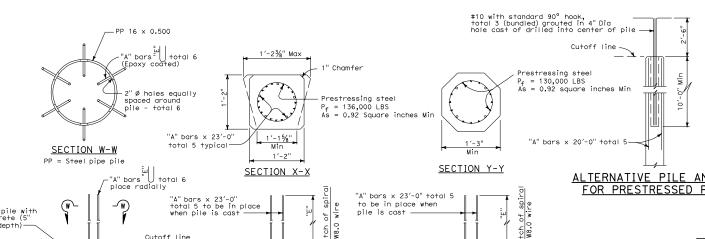
ACCESSIBLE PARKING **ON-STREET**

NO SCALE

RSP A90B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN A90B DATED MAY 1, 2006 - PAGE 118 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP A90B

ISA = International Symbol of Accessibility



W8.0

pi e

to be in place when

Octagonal or

optional

circular section

pile is cast

(W)

Plug pile with concrete (5"

<u>.</u>

2" Ø holes

Min depth)

total 5 to be in place when pile is cast

NOTES:

Cutoff line_

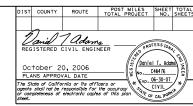
Ē

pipe

unfille

eng+h

ALTERNATIVE "W"

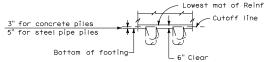


To accompany plans dated

ALTERNATIVE PILE ANCHOR FOR PRESTRESSED PILE

	Nomimal Resistance	(Tension) *
	Not Required	Required
"A" bars	#6	#8
"E" Dimension	2'-0"	2'-10"

^{*} See Pile Data Table in the Project Plans for Nominal Resistance (Tension) Requirements



DESIGN NOTES:

2W8.0 paym

** W11.0 @ 13/4" may be substituted

ALTERNATIVE "Y"

PILE EMBEDMENT

DESIGN CAPACITY:

Compression = 200 kip (Service state)

= 400 kip (Nominal axial strength)

Tension = 80 kip (Service state)

= 200 kip (Nominal axial strength)

REINFORCED CONCRETE

 $f_{C}^{I} = 4,000 \text{ psi}$

 $f_y = 60,000 \text{ psi}$

PRECAST PRESTRESSED PILES

P. = Prestress Force (After losses)

Concrete Strength f'c @ 28 days = 7,000 psi

f'c; @ transfer = 4,000 psi STEEL PIPE PILE

Fy (minimum yield strength) = 45,000 psi

Fu (minimum tensile strength) = 66,000 psi

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

PILE DETAILS CLASS 200

NO SCALE

RSP B2-8 DATED OCTOBER 20, 2006 SUPERSEDES STANDARD PLAN B2-8 DATED MAY 1, 2006-PAGE 242 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B2-8

80 wire diameters minimum. Spiral pile reinforcement at splices and at ends shall be terminated by a 135 hook with 6" tail hooked around a longitudinal bar or strand. 3. At the Contractor's option, alternative steel pipe with at least the diameter and wall thickness shown on these plans may be used. The diameter shall not exceed 1'-6". 4. Alternative "W" piles shall not be used for corrosive environments.

5. Maximum cut-off length at the top of the Alternative "X" and Alternative "Y" piles is 10'-0".

Pile reinforcement extending into footing shall be hooked as required to provide clearance to top of footing.

2. Lapped splices in spiral pile reinforcement shall be lapped

** W11.0 @ $1\frac{3}{4}$ " may be substituted

ALTERNATIVE "X"



Summer

3/4"

1/2"

1/2"

1/2'

1/2"

1/2'

1/2"

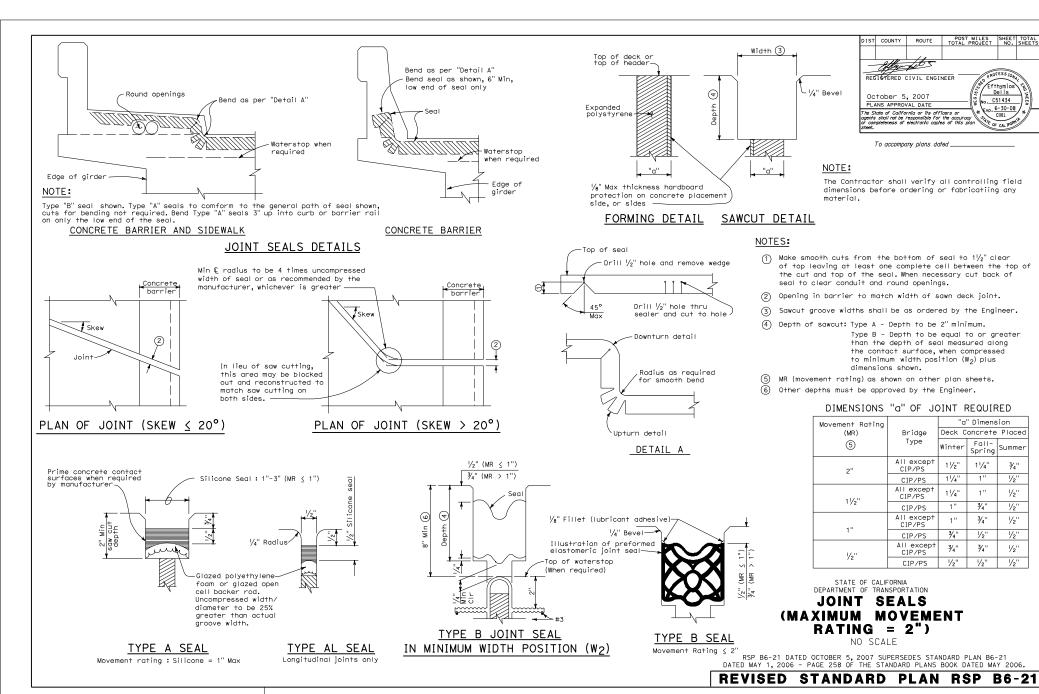
1/2"

Delis

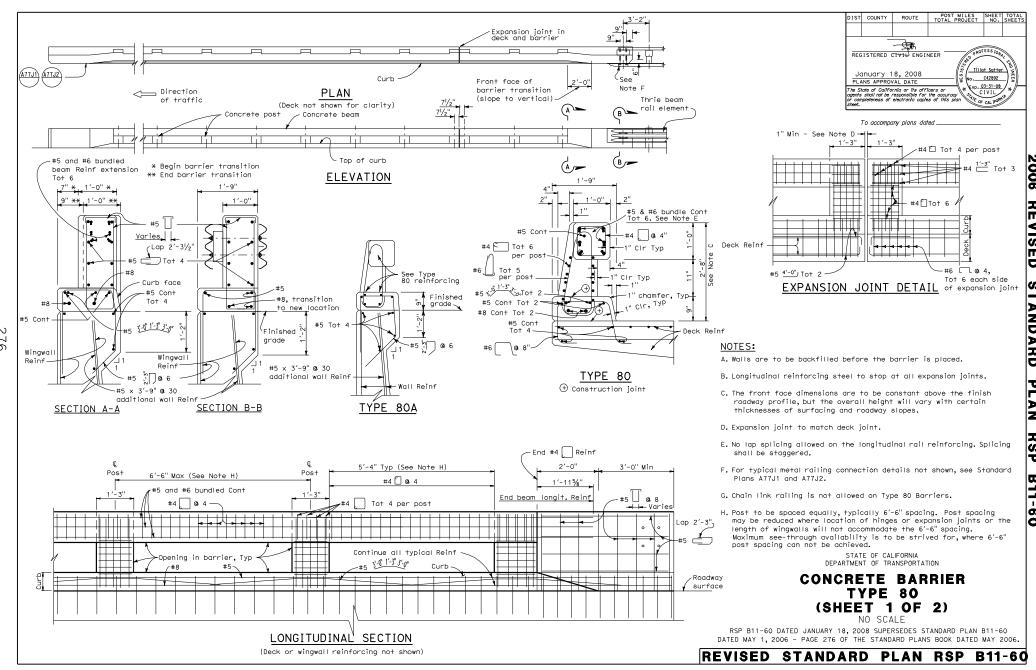
c. C51434

Exp. 6-30-08

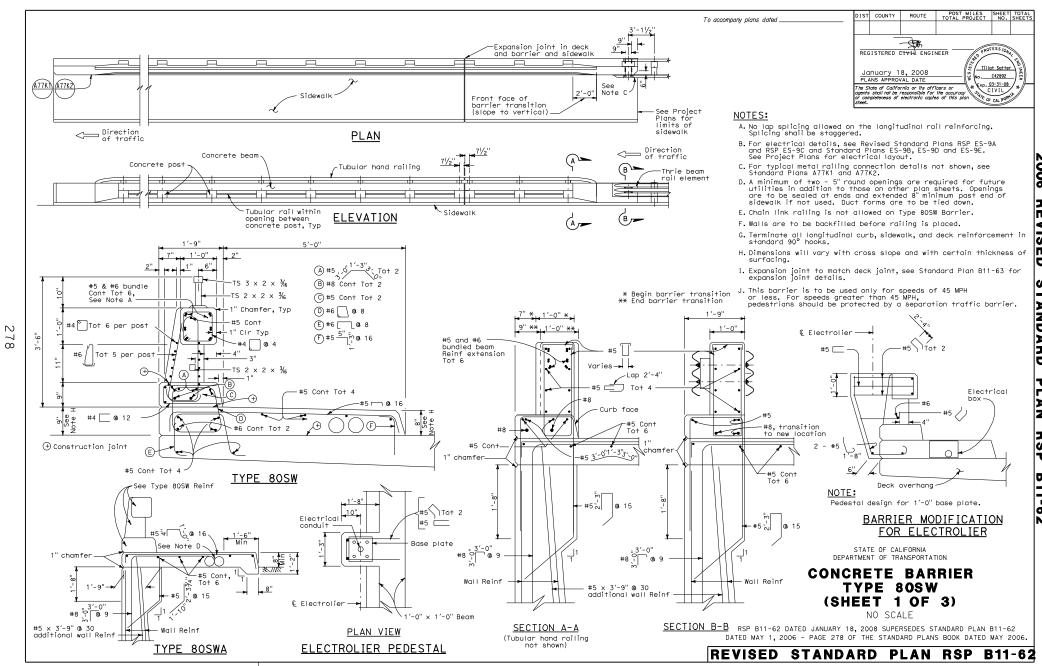
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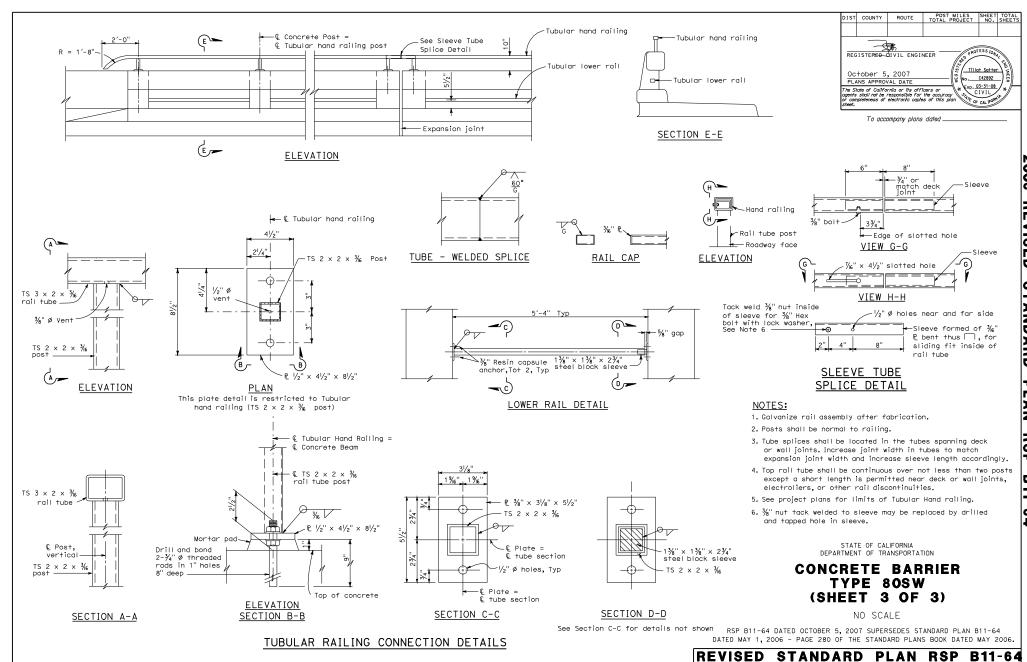




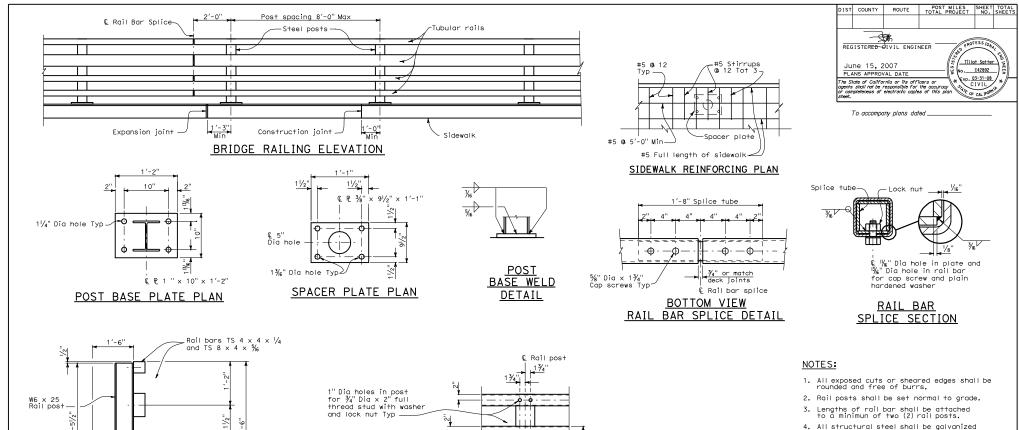












- φ÷φ

- 6 - 6

ELEVATION

Heavy hex nut and washer Typ

Hex nut Typ-

RAIL POST

ANCHORAGE

11.0

4-1" Dia all thread Typ

Post base

plate

Hex jamb nut

-Spacer plate

Тур

9//2"

#5 Stirrup .

6'-6"

TYPICAL SECTION

3 #5 .1

Stirrups at each post

#5 To+ 5

Bridge deck

Evenly

spaced

O 12

- All structural steel shall be galvanized after fabrication.
- 5. Rail post anchoring nuts shall be tightened to a snug fit and given additional ½ turn.
- 6. Holes in posts for rail bar attachment may be field drilled. Holes shall be coated with an approved zinc-rich paint prior to erection.
- 7. This barrier is to be used only for speeds of 45 mph or less. For speeds greater than 45 mph, pedestrians should be protected by a separation traffic barrier.

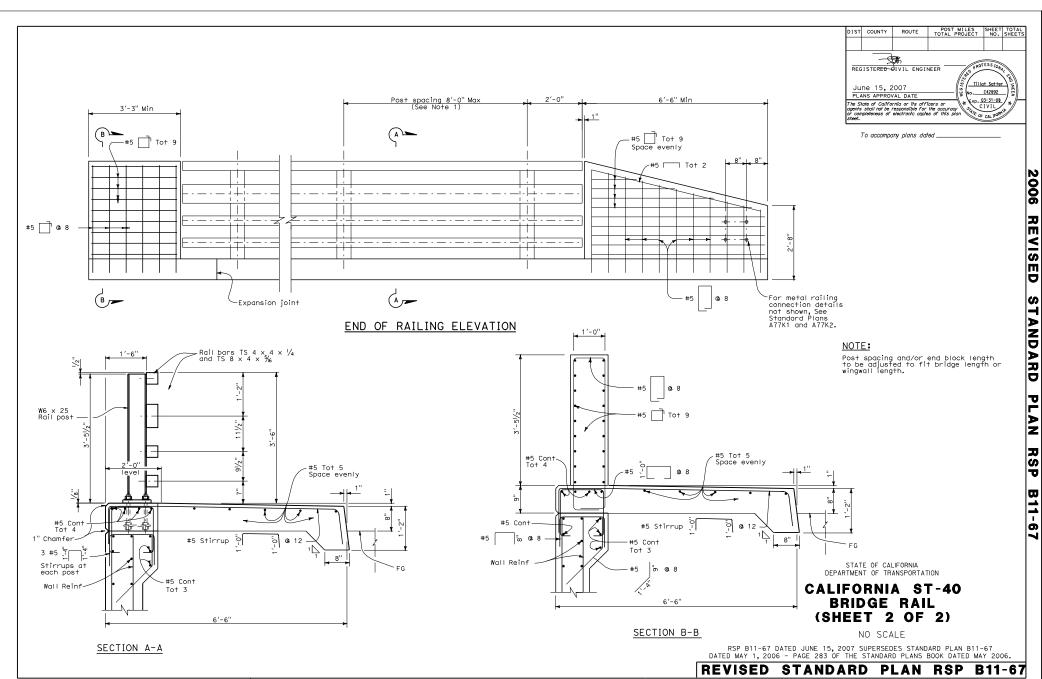
STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

CALIFORNIA ST-40 BRIDGE RAIL (SHEET 1 OF 2)

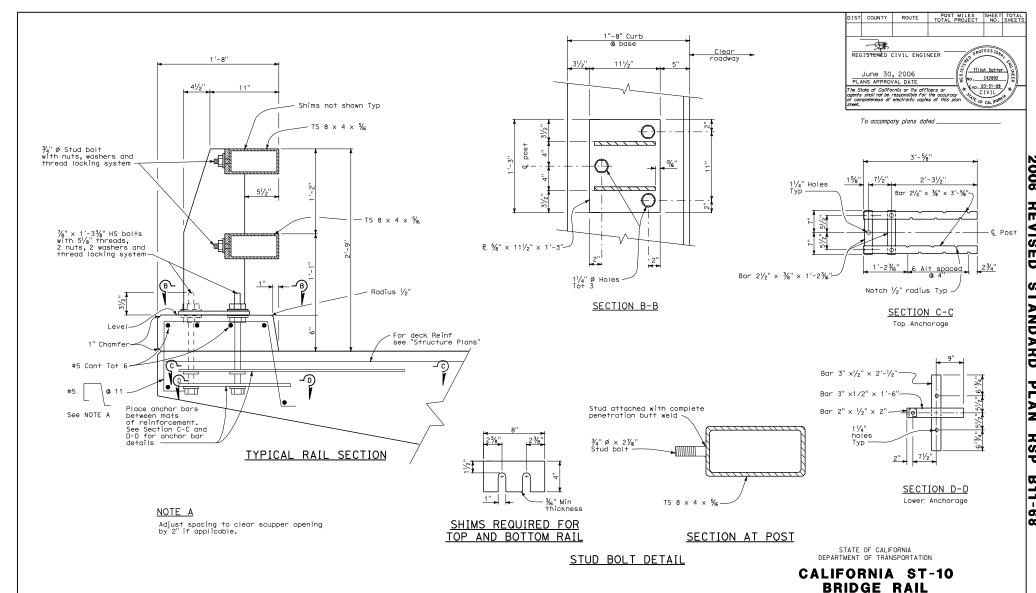
NO SCALE

RSP B11-66 DATED JUNE 15, 2007 SUPERSEDES STANDARD PLAN B11-66 DATED MAY 1, 2006 - PAGE 282 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B11-66







(SHEET 1 OF 3)

NO SCALE

RSP B11-68 DATED JUNE 30, 2006 SUPERSEDES STANDARD PLAN DATED MAY 1, 2006 - PAGE 284 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B11-68

1

Maximum

6'-0"

8'-0"

10'-0"

12'-0"

14'-0"

16'-0"

Compressive

Strength of CMU

(psi)

1900

1900

1900

1900

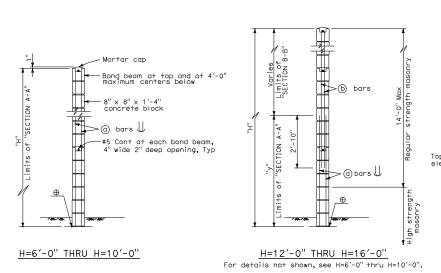
1900

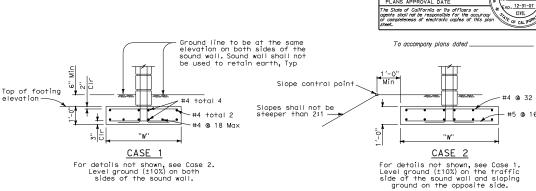
2800

POST MILES SHEET TOTAL TOTAL PROJECT NO. SHEETS

Douglas J. Dunr

C47240





SPREAD FOOTING SECTION

(b)bars @

#4

#4

#4

-4" Max

a)bars @

1'-4" Max

#4

#4

#5

#6

#6

Maximum

6'-0"

8'-0"

10'-0"

12'-0"

14'-0'

TYPICAL SECTION

⊕Full mortar bed at bottom of wall

TRENCH FOOTING

TRENCH FOOTING									
		CASE	1	CAS					
Maximum	Ø = 25 Min	Ø = 30 Min	Ø = 35 Min	Ø = 30 Min	Ø = 35 Min	Maximum			
Н	D	D	D	D	D	н			
6'-0"	5′-0"	4'-3"	3'-6"	6'-6"	5'-0"	6'-0"			
8'-0"	6'-0"	5′-0"	4'-3"	7′-9"	6'-0"	8'-0"			
10'-0"	6'-9"	5′-9"	5′-0"	8'-9"	6'-9"	10'-0"			
12'-0"	7'-9"	6'-6"	5′-6"	9'-9"	7'-9"	12'-0"			
14'-0"	8'-6"	7'-3"	6'-0"	10'-9"	8'-6"	14'-0"			
16'-0"	9'-3"	7′-9"	6'-6"	11'-9"	9'-3"	16'-0"			

Case 1 - Level ground ($\pm 10\%$) on both sides of the sound wall.

Case 2 - Level ground ($\pm 10\%$) on traffic side of the sound wall and sloping ground on opposite side.

SPREAD FOOTING

Maximum H	w
6'-0"	3'-0"
8'-0"	4'-0"
10'-0"	5'-0"
12'-0"	5'-9"
14'-0"	6'-6"
16'-0"	7'-6"

Maximum H	W	
6'-0"	3'-0"	
8'-0"	4'-0"	
10'-0"	5'-0"	
12'-0"	5′-9"	
14'-0"	6'-6"	
16'-0"	7′-6"	

GENERAL NOTES:

6'-0'

8'-0'

10'-0"

SOUND WALL REINFORCEMENT TABLE

(psi)

1500

1500

1500

1500

1500

2000

- A. For type of block and joint finish, see other sheets.
- B. When blocks are laid in stacked bond, ladder type, galvanized joint reinforcement shall be provided. A minimum of 2-9 gauge wires continuous at 4'-0" maximum to be used. Locate reinforcement in joints that are at the approximate midpoint between bond and beams.
- C. Horizontal joints shall be tooled concave or may be weathered. Vertical joints shall be tooled concave or may be raked.

COUNTY

REGISTERED CIVIL ENGINEER

October 5, 2007

PLANS APPROVAL DATE

- D. For intermediate wall heights that are between the "H's" given, use the tabular information for the next higher "H".
- E. Masonry strengths are listed in the "SOUND WALL REINFORCEMENT TABLE".

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

SOUND WALL MASONRY BLOCK ON FOOTING DETAILS (1)

NO SCALE

RSP B15-1 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B15-1 DATED MAY 1, 2006 - PAGE 291 OF THE STANDARD PLANS BOOK DATED MAY 2006

REVISED STANDARD PLAN RSP B15-1

same sides Sound	nd line to be at the elevation on both s of the sound wall. d wall shall not be to retain earth, Typ	Slope control point Slopes shall not be steeper than 2:1	1'-0" Min	
a a a a a a a a a a a a a a a a a a a		#4 @ 18 Max —	① bars	
CASE 1			CASE 2	

Тор

elev

For details not shown, see Case 2. Level ground (±10%) on both sides of the sound wall.

TRENCH FOOTING SECTION

For details not shown, see Case 1. Level ground (±10%) on one side of the sound wall and sloping ground

on the opposite side.

GENERAL NOTES:

- A. For type of block and joint finish, see other sheets.
- B. When blocks are laid in stacked bond, ladder type, galvanized joint reinforcement shall be provided. A minimum of 2-9 gauge wires continuous at 4'-0" maximum to be used. Locate reinforcement in joints that are at the approximate midpoint between bond beams.
- C. Horizontal joints shall be tooled concave or may be weathered. Vertical joints shall be tooled concave or may be raked.
- D. For intermediate wall heights that are between the "H's" given, use the tabular information for the next higher "H".
- E. Masonry strengths are listed in the "SOUND WALL REINFORCEMENT TABLE". See Standard Plan B15-3.

DESIGN NOTES:

Uniform Building Code, 1997 Edition and the Bridge Design Specifications.

and the Bridge Design Specification:
DESIGN WIND LOAD DESI

DESIGN SEISMIC LOAD
0.57 Dead load

REGULAR STRENGTH

20 psf

DESIGN

REINFORCED CONCRETE

CONCRETE MASONRY

f'c = 3.6 ksify = 60 ksi

f'm = 1500 psi f'm = 2000 psi f'm = 2500 psi fb = 495 psi fb = 660 psi fb = 830 psi fs = 24,000 psi fs = 24,000 psi n = 25.8 n = 19.3 n = 15.5

HIGH STRENGTH

REGISTERED / CIVIL ENGINEER

October 5, 2007

PLANS APPROVAL DATE

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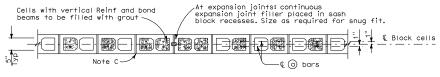
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POST MILES SHEET TOTAL TOTAL PROJECT NO. SHEETS

To accompany plans dated _____

ROUTE

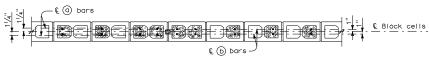
COUNTY



SECTION A-A

For details not shown, see other sections.

H=6'-0" THRU H=10'-0"



SECTION A-A

SECTION B-B

For details not shown, see other sections.

H=12'-0" THRU H=16'-0"

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SOUND WALL MASONRY BLOCK ON PILE CAP DETAILS (2)

NO SCALE

RSP B15-4 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B15-4
DATED MAY 1, 2006 - PAGE 294 OF THE STANDARD PLANS BOOK DATED MAY 2006

REVISED STANDARD PLAN RSP B15-4

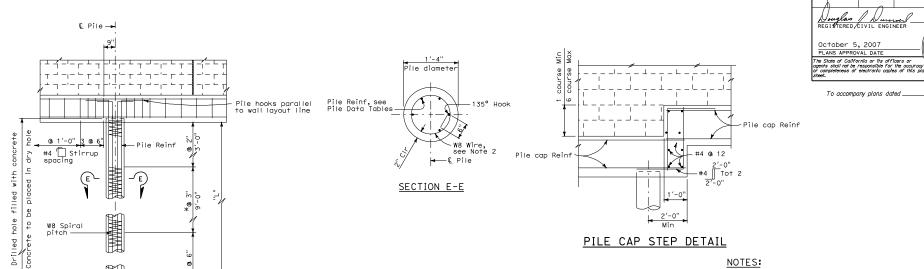
7-6-0

POST MILES SHEET TOTAL TOTAL PROJECT NO. SHEETS

Couglas J. Dunr

x Exp. 12-31-07

C47240



1. For details not shown, see Standard Plan B15-3 and Revised Standard Plan RSP B15-4.

COUNTY

October 5, 2007

PLANS APPROVAL DATE

To accompany plans dated _

ROUTE

Lapped splices in spiral reinforcement shall be lapped at least 80 wire diameters. Spiral reinforcement at splices and at ends shall be terminated with a 135° hook with a 6" tail hooked around a longitudinal bar.

	CASE 1 - PILE DATA TABLE											
		ø = 25	Min		ø = 30	Mîn		ø = 35 Min				
Maximum H	s	L	Pile Reinf	S	L	Pile Reinf	s	L	Pile Reinf	Maximum H		
6'-0"	16'-0"	7'-0"	#6 To+ 6	16'-0"	5'-6"	#6 Tot 6	16'-0"	4'-6"	#6 To+ 6	6'-0"		
8'-0"	16'-0"	8'-6"	#6 Tot 7	16'-0"	7'-0"	#6 Tot 7	16'-0"	5'-6"	#6 To+ 7	8'-0"		
10'-0"	16'-0"	10'-0"	#7 Tot 6	16'-0"	8'-0"	#7 To+ 6	16'-0"	6'-6"	#7 To+ 6	10'-0"		
12'-0"	15'-0"	11'-6"	#8 Tot 7	16'-0"	9'-6"	#8 To+ 7	16'-0"	7'-6"	#8 To+ 7	12'-0"		
14'-0"	13'-0"	11'-6"	#8 To+ 7	14'-0"	10'-0"	#8 To+ 7	14'-0"	8'-0"	#8 To+ 7	14'-0"		
16'-0"	12'-0"	12'-0"	#8 Tot 7	13'-0"	10'-6"	#8 To+ 7	13'-0"	8'-6"	#8 Tot 7	16'-0"		

— CIDH Pile

DETAIL D * @ 2" at option of Contractor

Case 1 - Level	around	(±10%)	on both	sides	Ωf	the	sound	wall.

CASE 2 - PILE DATA TABLE											
	9	ø = 30 N	/lin		ø = 35	Min					
Maximum H	S	L	Pile Reinf	S	L	Pile Reinf	Maximum H				
6'-0"	16'-0"	11'-6"	#8 To† 7	16'-0"	8'-6"	#6 To† 7	6'-0"				
8'-0"	16'-0"	14'-0"	#8 To+ 7	16'-0"	10'-6"	#7 Tot 6	8'-0"				
10'-0"	15'-0"	16'-0"	#8 To+ 7	16'-0"	12'-0"	#7 Tot 7	10'-0"				
12'-0"	12'-0"	16'-0"	#8 To+ 7	15'-0"	13'-6"	#8 To+ 7	12'-0"				
14'-0"	10'-0"	16'-0"	#8 To+ 7	12'-0"	13'-6"	#8 To+ 7	14'-0"				
16'-0"	8'-0"	16'-0"	#8 To+ 7	11'-0"	14'-0"	#8 To+ 7	16'-0"				

Case 2 - Level ground ($\pm 10\%$) on traffic side of the sound wall and sloping ground on opposite side.

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

SOUND WALL MASONRY BLOCK ON PILE CAP DETAILS (3)

NO SCALE

RSP B15-5 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B15-5
DATED MAY 1, 2006 - PAGE 295 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B15-5

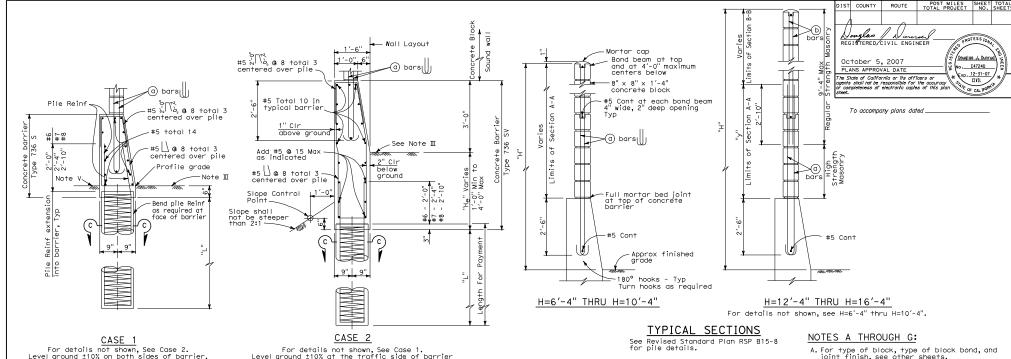
Douglas J. Dunrus

Exp. 12-31-07

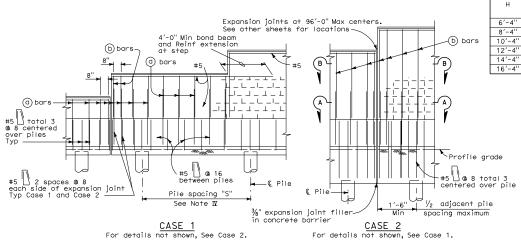
CIVIL

OF CAL IFOR

C47240



BARRIER SECTIONS



PARTIAL ELEVATIONS

and sloping ground on the opposite side.

#4 #4 NOTES I THROUGH Ⅵ:

#4

Maximum|(a) bars |(b) bars

#4

#4

#5

#6

#6

@ 1'-4" Max @ 1'-4" Max

I. Details shown are primarily to conform design of sound walls to Type 736S and Type 736 SV Concrete Barriers. For sound wall details conforming with barriers see Standard Plan B15-7 and Revised Standard Plan RSP B15-8.

5'-0"

7'-0"

SOUND WALL REINFORCEMENT TABLE

(psi)

1500

1500

1500

1500

1500

2500

Compressive

Strength

of CMU

(psi)

1900

1900

1900

1900

1900

Н

6'-4"

8'-4"

10'-4"

12'-4"

14'-4"

16'-4"

- II. For details and sections not shown, see Standard Plan B15-7 and Revised Standard Plan RSP B15-8.
- ■. Slope ground at traffic side of barrier to drain. Maximum slope ±10%. See Std Plan B11-56, Note D.
- ☑. Pile spacing may be varied, but shall not exceed the tabular values. See Revised Standard Plan RSP B15-8.
- Y. For Case 1 ground line to be at the same elevation on both sides of the barrier. Barrier shall not be used to retain earth.
- Ⅲ. See Standard Plan B15-9 for other details.

- A. For type of block, type of block bond, and joint finish, see other sheets.
- B. When blocks are laid in stacked bond. ladder type, galvanized joint reinforcement shall be provided. A minimum of 2-9 gauge wires continuous at 4'-0" maximum to be used. Locate reinforcement in joints that are at the approximate midpoint between bond beams.
- C. Horizontal joints shall be tooled concave or may be weathered. Vertical joints shall be tooled concave or may be raked.
- D. For intermediate wall heights (H), or barrier depths (He), that are between the values given, use the tabular information for the next higher (H) or (He).
- E. Class 2 concrete to be used for the barrier.
- F. Masonry strengths are listed in the "SOUND WALL REINFORCEMENT TABLE".

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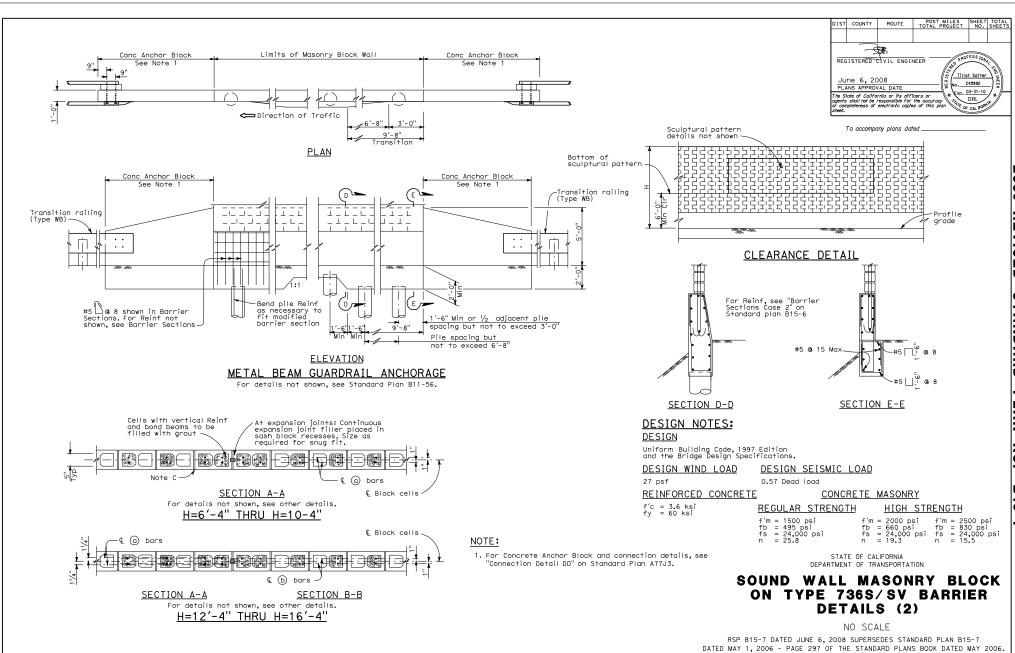
SOUND WALL MASONRY BLOCK ON TYPE 736S/SV BARRIER DETAILS (1)

NO SCALE

RSP B15-6 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B15-6 DATED MAY 1, 2006 - PAGE 296 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B15-6

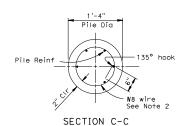


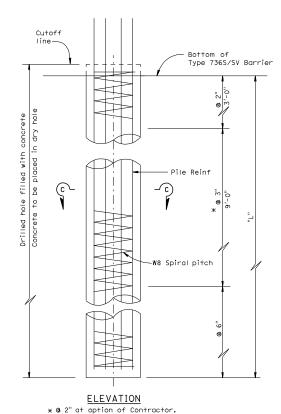


B15-7

RSP

REVISED STANDARD PLAN





CASE 1: PILE DATA TABLE											
	Ø	5 = 25 M	lin	Ø	Ø = 30 Min			Ø = 35 Mîn			
Maximum H	S	L	Pile Reinf	S	L	Pile Reinf	s	L	Pile Reinf	Maximum H	
6'-4"	10'-0"	8'-6"	#6 Tol 6	10'-0"	7'-0"	#6 Tol 6	10'-0"	6'-0"	#6 Tol 6	6'-4"	
8'-4"	10'-0"	9'-6"	#6 Tol 6	10'-0"	8'-0"	#6 Tol 6	10'-0"	7'-0"	#6 Tol 6	8'-4"	
10'-4"	10'-0"	10'-6"	#6 Tol 6	10'-0"	9'-0"	#6 Tol 6	10'-0"	7'-6"	#6 Tol 6	10'-4"	
12'-4"	10'-0"	11'-6"	#7 Tol 6	10'-0"	9'-6"	#7 Tol 6	10'-0"	8'-6"	#6 Tol 6	12'-4"	
14'-4"	10'-0"	12'-6"	#7 Tol 7	10'-0"	10'-6"	#7 Tol 7	10'-0"	9'-0"	#7 Tol 7	14'-4"	
16'-4"	10'-0"	13'-0"	#8 Tol 7	10'-0"	11'-6"	#8 Tol 7	10'-0"	9'-6"	#7 Tol 7	16'-4"	

CASE 2: PILE DATA TABLE										
Н _е	Maximum H	ø = 30 Min			ø = 35 Min					
		S	L	Pile Reinf	s	L	Pile Reinf	Maximum H		
1'-0"	6'-4"	10'-0"	15'-0"	#7 Tol 6	10'-0"	12'-0"	#6 Tol 6	6'-4"		
	8'-4"	9'-9"	16'-0'	#7 Tol 6	10'-0"	13'-0"	#7 Tol 6	8'-4"		
	10'-4"	8'-0"	16'-0"	#7 Tol 6	10'-0"	14'-0"	#7 Tol 6	10'-4"		
	12'-4"	6'-9"	16'-0"	#7 Tol 6	10'-0"	15'-0"	#8 Tol 7	12'-4"		
	14'-4"	5'-9"	16'-0"	#7 Tol 6	9'-6"	15'-6'	#8 Tol 7	14'-4"		
	16'-4"	5'-0"	16'-0"	#7 Tol 6	8'-9"	16'-0"	#8 Tol 7	16'-4"		
	6'-4"	8'-3"	16'-0"	#7 Tol 6	10'-0"	13'-6"	#7 Tol 6	6'-4"		
	8'-4"	7'-0"	16'-0"	#7 Tol 6	10'-0"	14'-6"	#7 Tol 7	8'-4"		
2'-0"	10'-4"	6'-0"	16'-0"	#7 Tol 6	10'-0"	15'-3'	#8 Tol 7	10'-4"		
	12'-4"	5'-3"	16'-0"	#7 Tol 6	9'-9"	16'-0"	#8 Tol 7	12'-4"		
	14'-4"	4'-6"	16'-0"	#7 Tol 6	8'-4"	16'-0"	#8 Tol 7	14'-4"		
	16'-4"	4'-0"	16'-0"	#7 Tol 6	7'-4"	16'-0"	#8 Tol 7	16'-4"		
	6'-4"	6'-0"	16'-0"	#7 Tol 6	10'-0"	15'-3"	#8 Tol 7	6'-4"		
	8'-4"	5'-3"	16'-0"	#7 Tol 6	10'-0"	16'-0"	#8 Tol 7	8'-4"		
3'-0"	10'-4"	4'-6"	16'-0"	#7 Tol 6	8'-10"	16'-0"	#8 Tol 7	10'-4"		
	12'-4"	4'-0"	16'-0"	#7 Tol 6	7'-10"	16'-0"	#8 Tol 7	12'-4"		
	14'-4"	3'-6'	16'-0"	#7 Tol 6	6'-10"	16'-0"	#8 Tol 7	14'-4"		
	16'-4"	3'-3"	16'-0"	#7 Tol 6	6'-2"	16'-0"	#8 Tol 7	16'-4"		
	6'-4"	4'-3"	16'-0"	#7 Tol 6	8'-0"	15′-6"	#8 Tol 7	6'-4"		
4'-0"	8'-4"	3'-10"	16'-0"	#7 Tol 6	7'-4"	15'-9"	#8 Tol 7	8'-4"		
	10'-4"	3'-6"	16'-0"	#7 Tol 6	6'-10"	16'-0"	#8 Tol 7	10'-4"		
	12'-4"	3'-2"	16'-0"	#7 Tol 6	6'-3"	16'-0"	#8 Tol 7	12'-4"		
	14'-4"	3'-0"	16'-3"	#7 Tol 6	5'-8"	16'-0"	#8 Tol 7	14'-4"		
	16'-4"	2'-10"	16′-6"	#7 Tol 6	5′-0"	16'-0"	#8 Tol 7	16'-4"		

DIST	COUNTY	ROUTE	POST TOTAL F	PROJECT	SHEET NO.	TOTAL						
Neusland Winner REGISTERED/CIVIL ENGINEER October 5, 2007												
PLANS APPROVAL DATE												
agents	shall not be	rnia or its affi responsible for electronic caple	the accuracy	120] * [[*						

To accompany plans dated ..

NOTES:

- For details not shown, see Revised Standard Plan RSP B15-6 and Standard Plan B15-7.
- Lapped splices in spiral reinforcement shall be lapped at least 80 wire diameters. Spiral reinforcement at splices and at ends shall be terminated with a 135° hook with a 6" tail hooked around a longitudinal bar.

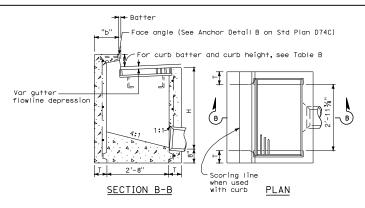
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

SOUND WALL MASONRY BLOCK ON TYPE 736S/SV BARRIER DETAILS (3)

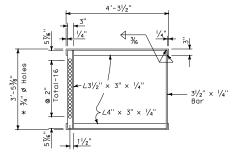
NO SCALE

RSP B15-8 DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN B15-8 DATED MAY 1, 2006 - PAGE 298 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP B15-8

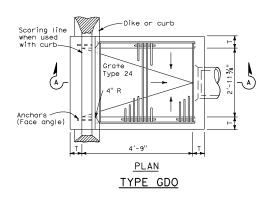


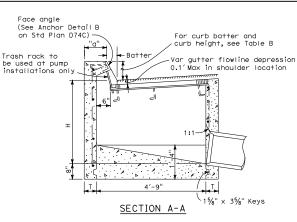
TYPE GO



* ¾" Ø Holes required only with trash rack

GRATE FRAME FOR TYPE GDO INLET





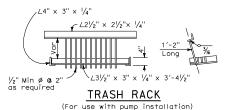


TABLE A

	CON	ICRETE QU	ANTITIES											
	H=3'-0" TO 8'-0" (T=6") H=8'-1" TO 20'-0" (T=8")													
TYPE		ADDITIONAL PCC PER FOOT	H=8'-1"	ADDITIONAL PCC PER FOOT										
	(CY)	(CY)	(CY)	(CY)										
GO	1.24	0.245	3.39	0.346										
GDO	1.62	0.322	4.36	0.446										

Table based on 8" floor slab, no deduction for pipe openings, and curb type giving highest quantity of concrete. No deductions or adjustments are to be made to these quantities because of pipe openings, different floor alternatives or different curb type.

TABLE B

CURB TYPE	NORMAL CURB	CURB	"a" DIMENSION	"b"
1111	HEIGHT		DIMENSION	DIMENSION
A1-6	6"	1 1/2"	T+71/2"	T+6½"
A1-8	8"	2"	T+7"	T+6"
B1-6	6"	4"	T+5"	T+4"
Type A Dike	6"	3"	T+6"	T+5"

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL							
Ju	ne 15, 2		(S) (G) (G) (No. C3		121							
The State of California or its officers or agents shall not be responsible for the occuracy or completeness of electronic copies of this plan sheet.												

To accompany plans dated __

NOTES:

- "H" is the difference in elevation between the outlet pipe flow line and the normal gutter grade line undepressed.
- 2. For "T" wall thickness, see Table A below.
- 3. Wall reinforcing not required when "H" is 8'-0" or less and the unsupported width or length is 7'-0" or less. Walls exceeding these limits shall be reinforced with #4 @ 18"± centers placed 1½" clear to inside of box unless otherwise shown.
- 4. Inlet bottom reinforcing not required. See Standard Plan D74C for alternative reinforced bottom.
- 5. Steps None required where "H" is less than 2'-6" Where "H" is 2'-6" or more, install steps with lowest rung 1'-0" above the floor and highest rung not more than 6' below top of inlet. The distance between steps shall not exceed 1'-0" and shall be uniform throughout the length of the wall. Place steps in the wall without an opening. Step inserts may be substituted for the bar steps. Step Inserts shall comply with State Industrial Safety requirements. See Standard Plan D74C for step details.
- When shown on the project plans, place a ¾" plain round protection bar horizontally across the length of the opening and bend back 4" into the inlet wall on each side.
- 7. Pipe(s) can be placed in any wall.
- 8. Curb section shall match adjacent curb.
- Basin floors shall have wood trowel finish and shall slope toward the outlet pipe as shown.
- Galvanizing See Standard Specifications or Special Provisions.
- See Standard Plan D77A and D77B for grate and frame details and weights of miscellaneous iron and Steel.
- 12. See Standard Plan D78A for gutter depression details.
- 13. Full penetration butt welds may be substituted for the fillet welds on all anchors.
- 14. Standard square, hexagon, round or equivalent headed anchors may be substituted for the right angle hooks on the anchors shown on this plan.
- 15. Cast-in-place or precast alternative is optional with contractor. See Standard Specifications.
- 16. Cast-in-place inlets to be formed around all pipes/stubs intersecing the inlet and concrete poured in one continuous operation. Precast inlets shall have mortared pipe connections conforming to details for Type GCP inlets on Standard Plan D75B. See Standard Specifications for mortar composition.

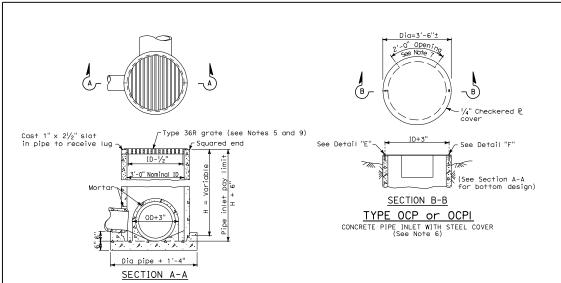
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

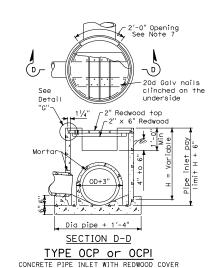
DRAINAGE INLETS

NO SCALE

RSP D74B DATED JUNE 15, 2007 SUPERSEDES STANDARD PLAN D74B DATED MAY 1, 2006 - PAGE 150 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D74B

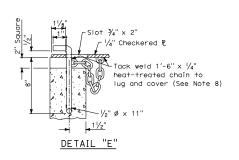




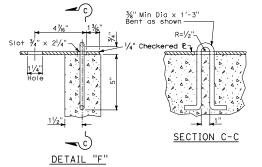
(See Notes 6 and 10)

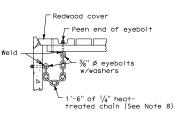


To accompany plans dated ___



TYPE GCP
CONCRETE PIPE INLET WITH GRATE





DETAIL "G"

NOTES:

- For details of steel pipe inlets, see Standard Plan D75A.
- 2. For details of ladder and steps and when ladder or steps are required, see Standard Plan D75C.
- 3. Inlet pipes shall not protrude into basin.
- Except for inlets used for junction boxes, basin floors shall have minimum slope of 4:1 from all directions toward outlet pipe, and a wood trowel finish.
- See Revised Standard Plan RSP D77A and Standard Plan D77B for Grate and Frame Details and Weights of Miscellaneous Iron and Steel.
- Designation of Type OCPI pipe inlets on plans indicates trash racks are to be furnished and installed on all side openings. See Standard Plan D75C for Trash Rack details.
- More than one side opening may be required. Location and number as ordered by the Engineer. Opening may be cast in pipe.
- 8. Chain to be provided when specified.
- Place pipe so bars of grate will be parallel with main surface flow.
- Redwood covers shall only be placed at locations designated on the plans.

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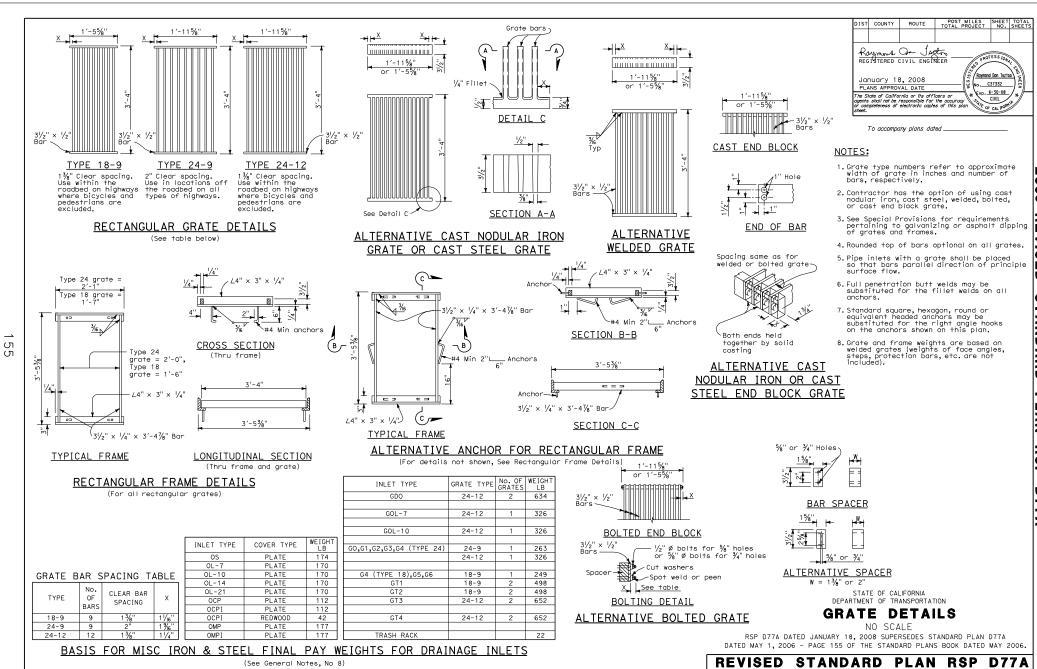
CONCRETE PIPE INLETS

NO SCALE

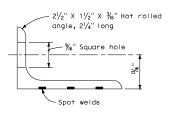
RSP D75B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D75B
DATED MAY 1, 2006 - PAGE 153 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D75B









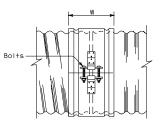
<u>ANGLE</u>



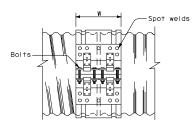
To accompany plans dated _____

NOTES:

- All ferrous metal coupling band connection hardware shall be galvanized or electroplated in accordance with the Standard Specifications.
- 2. Dimensions and thicknesses shown are minimum.
- Spot welds shall develop minimum required strength of strap.
- Fillet welds of equivalent strength may be substituted for spot welds or rivets.
- Dimension depends upon whether end condition is lips up or lips down.



SIDE VIEW
SINGLE BAR AND STRAP

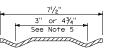


SIDE VIEW

DOUBLE BAR AND STRAP

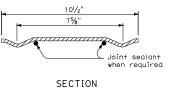


SECTION
H-4 HUGGER BAND

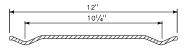


SIDE VIEW ANGLE

SECTION
H-7 HUGGER BAND



H-10 HUGGER BAND



SECTION

H-12 HUGGER BAND

HUGGER COUPLING BANDS

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

CORRUGATED METAL PIPE COUPLING DETAILS No. 4 HUGGER COUPLING BANDS

NO SCALE

RSP D97D DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97D DATED MAY 1, 2006 - PAGE 186 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97D

ANNULAR AND HELICAL PROFILE

									BAR AN	ID STR	AP			(No Did) ANGLE TO BAND ANGLE CSP CAP CSP CAP CS 2-3/4" 2-3/4" 2-1/2" 2-1/2" 3-1/2" 3-1/2" 3-3/4" 3-3/4" 3-3 3-1/2" 3-1/2" 3-3/4" 3-3/6" 5							
	2125			PIPE WALL	THICKNESS	BAND TH	ICKNESS				BAR YIELD	DIMEN	SIONS					SPOT WELDS ANGLE TO BAND			
COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W OR A	CSP	CAP	CSP	CAP	STRAP THICKNESS	BOLTS Dia	BAR Dia	STRENGTH	CSP	CAP	CSP	CAP	CSP	CAP	CSP			
TWO PIECE	11/2' x 1/4"	6"-10"	7"	0.052"-0.079"	0.048"-0.060"	0.052"	0.060"								2-3/8"						
INTEGRAL		12"-18"	7"	0.052"-0.079"		0.064"															
FLANGE	2 ² / ₃ " × 1/ ₂ "	12"-24"	7"	0.052"-0.079"																	
		THROUGH 36"	12"	0.052"-0.138"	0.060"-0.135"	0.052"	0.060"					2" × 2" × 3/6"	2" × 2" × ¾6"					3-1/2"			
UNIVERSAL	2 ² / ₃ " × 1/ ₂ "	42"-60"	12"	0.052"-0.168"	0.075"-0.164"	0.052"	0.060"					2" × 2" × 3/6"	2" × 2" × 3/6"					5-1/2"			
OITI VEINSAE	2"/3 × /2	THROUGH 72"	12"	0.052"-0.168"	0.164"	0.052"		0.079"	1/2"	⅓"	32 ksi	2" × 2" × 3/6"	2" × 2" × 3/6"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"			
		78"-84"	161/4"	0.168"		0.079"		DOUBLE 0.079"	1/2"	7/8"	32 ksi										
		THROUGH 36"	7"	0.064"-0.138"		0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" × 2" × ¾6"	2" × 2" × ¾6"	2-1/2"	2-1/2"	3-3%"	3-3%"	3-1/2"			
	2 ² / ₃ " × 1/ ₂ "	42"-72"	12"	0.064"-0.168"	0.075"-0.164"	0.052"	0.105"	0.079"	1/2"	7/8"	32 ksi	2" × 2" × 3/6"	2" × 2" × 3/6"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"			
ANNULAR		78"-84"	12"	0.168"		0.079"		0.109"	1/2"	7∕8''	45 ksi	2" × 2" × 3/6"		3-1/2"		3-3/6"		5-1/2"			
ATTIOLATI		48"-90"	14"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi	2" × 2" × 3/6"		3-1/2"		3-3/8"		5-1/2"			
	3" x 1"	96"-120"	14"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi	2" × 2" × 3/6"		3-1/2"		4-3/8"					
		42"-108"	14"		0.060"-0.135"		0.060"						2" × 2" × 3/6"		3-1/2"		3-3/8"				
		THROUGH 36"	12"	0.052"-0.138"	0.060"-0.135"	0.052"	0.060"	0.079"	1/2"	7∕8''	32 ksi	2" × 2" × ¾6"	2" × 2" × ¾"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	3-1/2"			
	2 ² / ₃ " × 1/ ₂ "	42"-72"	12"	0.052"-0.168"	0.075"-0.164"	0.052"	0.060"	0.079"	1/2"	7/8"	32 ksi	2" × 2" × 3/6"	2" × 2" × ¾6"	3-1/2"	3-1/2"	3-3/8"	3-3%"	5-1/2"			
HELICAL	'5 '-	78"-84"	12"	0.168"		0.079"		0.109"	1/2"	7/8"	45 ksi	2" × 2" × 3/6"	_	3-1/2"		3-3/8"		5-1/2"			
HELICAL		48"-90"	14"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi	2" × 2" × 3/6"		3-1/2"		3-3/8"		5-1/2"			
	3" × 1"	96"-120"	14"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi	2" × 2" × 3/6"	_	3-1/2"		4-3/8"					
		42"-108"	14"		0.060"-0.135"		0.060"						2" × 2" × 3/6"		3-1/2"		3-3/8"				
		12"-54"	4"	0.052"-0.109"		0.052"						21/2" × 11/2" × 3/6"	21/2" × 11/2" × 3/6"	1-1/2"				3-1/2"			
		60"-66"	4"	0.109"		0.064"						21/2" × 11/2" × 3/6"	21/2" × 11/2" × 3/6"	1-1/2"				3-1/2"			
	2 ² / ₃ " × 1/ ₂ "	36"-48"	4"	0.138"		0.064"						21/2" × 11/2" × 3/6"	21/2" × 11/2" × 1/6"	1-1/2"				3-1/2"			
	REROLLED END	THROUGH 72"	101/2"	0.052"-0.168"		0.052"		0.079"	1/2"	7/8"	32 ksi										
		78"-84"	101/2"	0.168"		0.079"		0.109"	1/2"	7/8"	45 ksi										
	3" x 1"	48"-90"	101/2"	0.064"-0.109"		0.052"		0.079"	1/2"	7/8"	32 ksi										
HUGGER	REROLLED END	96"-120"	101/2"	0.079"-0.109"		0.052"		0.109"	1/2"	7/8"	45 ksi										
1.0002.1		48"-66"	71/2"	0.064"-0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi	21/2" × 11/2" × 3/6"	2½" x 1½" x ¾6"	1-1/2"				3-1/2"			
		72"-90"	71/2"	0.064"-0.079"		0.064"		0.079"	1/2"	7/8"	32 ksi		2½" × 1½" × ¾6"					3-1/2"			
1	5" × 1"	48"-90"	71/2"	0.064"-0.138"		0.064"		0.079"	1/2"	7/8"	32 ksi										
1	REROLLED END	48"-120"		0.064"-0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi										
			12" NOTE			0.064"		0.079"	1/2"	7/8"	32 ksi										
			12") 11	0.138"		0.064"		DOUBLE 0.079"	1/2"	7/8"	32 ksi										

								SPIRAL	RIB	PRO	FILE .							
								JI INAL	. 1110	1 110	166			ANGLE				
PIPE WALL THICKNESS BAND THICKNES					ICKNESS		AR AND :			DIMEN	SIONS		LTS - Dia)		/ETS TO BAND	SPOT WELDS ANGLE TO BAND		
COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	w	SSRP	ASRP	SSRP	ASRP	STRAP THICKNESS	BOLTS Dia		BAR YIELD STRENGTH	SSRP	ASRP	SSRP	ASRP	SSRP	ASRP	SSRP
ANNULAR 22/3" × 1/2" *		24"-36"	12"	0.064"-0.109"	0.060"-0.105"	0.052"	0.060"	0.079"	1/2"	7∕8"	32 ksi	2" × 2" × ¾"	2" × 2" × 3/6"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
	42"-60"	12"	0.064"-0.109"	0.075"-0.105"	0.052"	0.105"	0.079"	1/2"	7∕8"	32 ksi	2" × 2" × ¾6"	2" × 2" × 3/6"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"	
ANNOLAN	REROLLED END	66"-72"	12"	0.064"-0.109"		0.052"		0.079"	1/2"	7∕8"	32 ksi	2" × 2" × ¾"	2" × 2" × 3/6"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		78"-114"	12"	0.079"-0.109"		0.079"		0.109"	1/2"	7∕8"	45 ksi	2" × 2" × ¾6"	2" × 2" × 3/6"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
HILOCED	$_{\text{CER}}$ $2^2/_3$ " × $1/_2$ " * $24^{"}-72^{"}$ $10^{1}/_2$ " $0.064^{"}-0.109$ "	0.052"		0.079"	1/2"	7∕8"	32 ksi											
HUGGER R	REROLLED END	78"-84"	101/2"	0.109"		0.079"		0.109"	1/2"	7∕8"	45 ksi							

^{*} See Note 14.

DIST	COUNTY	ROUTE		PROJECT	SHEET NO.	TOTAL
JL PL	INE 6, 20	AL DATE	VEER	No. C:	ymond Tsztoc 37332 -30-08	CHO INEER
agents	shall not be	rnia or its offi responsible for electronic copie	the accura	0 1/2 V		

NOTES:

To accompany plans dated _______

- 1. All ferrous metal coupling band connection hardware shall be galvanized or electroplated in accordance with the Standard Specifications.
- 2. For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix anale.
- 3. Tension strap may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
- 4. Use 11/4" gage line dimension on attached angle leg for rivets and spot welds.
- 5. Band thickness shall not be less than: a. 3 standard thicknesses lighter than the thickness of the pipe for Corrugated Steel Pipe.
 - b. 2 standard thicknesses lighter than the thickness of the pipe and in no case lighter than 0.060" for Corrugated Aluminum Pipe.
- 6. Dimensions, thicknesses and strengths shown are minimum.
- 7. For pipe arches use same width band as for round pipe of equal periphery.
- 8. Fillet welds of equivalent strenght may be substituted for spot welds or rivets.
- 9. Spot welds shall develop minimum required strength of strap.
- 10. Pipe with rerolled ends having at least two $2^{2}/_{3}$ " x $1/_{2}$ " annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having $2^2/_3$ " \times $1/_2$ " corrugations.
- 11. In the case of H-12 huggerbands, two piece bands are required for diameters through 96" and three piece bands are required for diameters 102" through 120".
- 12. Two piece bands are required for pipes greater than 42" diameter.
- 13. The $2\frac{1}{4}$ " x 2" x 0.109" thick galvanized die-formed angle connector may be used in lieu of the 2" \times 2" \times $\frac{3}{6}$ " angle connector for standard joints only on pipes through 72" diameter.

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

CORRUGATED METAL PIPE **COUPLING DETAILS No. 5** STANDARD JOINT

NO SCALE

RSP D97E DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97E DATED MAY 1, 2006 - PAGE 187 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97E

^{14.} All profiles of Spiral Rib Pipe $(\frac{3}{4}" \times \frac{3}{4}" \text{ ribs at } 7\frac{1}{2}" \text{ pitch}$ and $\frac{3}{4}$ " x 1" ribs at 11 $\frac{1}{2}$ " pitch in both steel and aluminum and $\frac{3}{4}$ " x 1" ribs at $8\frac{1}{2}$ " pitch in steel only) shall be manufactured with rerolled ends. Corrugation profile of the rerolled ends shall be $2\frac{1}{3}$ " x $\frac{1}{2}$ " annual corrugations with a minimum of two full corrugations at each end.

								ANNULAR A	ND H	IELI	CAL PRO	FILE						
									AND S					А	NGLE			
								(C	SP ONL	.Y)		DIMEN	ISIONS		LTS		/ETS	SPOT WELDS
COUPLING	PIPE	PIPE		PIPE WALL	THICKNESS	BAND TH	IICKNESS	STRAP	BOLTS	BAR	BAR YIELD	DINIEN	310113	(No	Dia)	ANGLE T	O BAND	ANGLE TO BAND
TYPE	CORRUGATION	SIZE	W OR A	CSP	CAP	CSP	CAP	THICKNESS	Dia	Dia	STRENGTH	CSP	CAP	CSP	CAP	CSP	CAP	CSP
TWO PIECE	11/2" x 1/4"	6"-10"	7"	0.064"-0.079"	0.060"	0.064"	0.060"							2-3/8"	2-3/8"			
I INTEGRAL	2 ² / ₃ " × 1/ ₂ "	12"-24"	12"		0.060"-0.105"		0.060"							- /8	3-1/2"			
	_	THROUGH 36"		0.064"-0.138"			0.060"	0.079"	1/2"	7/8"	32 ksi	2" × 2" × 3/6"	2" , 2" , 3/ "	3-1/2"	3-1/2"	3-3/8"	3-3/a"	5-1/2"
UNIVERSAL	2 ² / ₃ " × 1/ ₂ "	42"-60"		0.064"-0.168"				DOUBLE 0.079"		78 7/8"		2" × 2" × 1/4"		4-1/2"	4-1/2"	5-3/8"	5-3/8"	3-72
		THROUGH 36"		0.064"-0.138"			0.060"	DOOBLE 0.013	/2	78	02	2" × 2" × 3/6"		3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		42"-60"		0.064"-0.079"		0.064"	0.000					2" × 2" × 3/6"	L X L X /16	3-1/2"	- /2	3-3/8"	· /8	5-1/2"
	- 3 () (42"-60"	12"		0.135"-0.164"		0.075"					2" × 2" × 1/4"	2" × 2" × 1/4"	3-1/2"	3-1/2"	5-3/8"	5-3/8"	- / -
	2 ² / ₃ " × ¹ / ₂ "	66"-72"	24"		0.164"		0.105"						2" × 2" × 1/4"		5-1/2"		5-1/2"	
		66"-84"	24"	0.109"-0.168"		0.064"						2" × 2" × 1/4"		5-1/2"		7-3/8"		
ANNULAR		42"-54"	12"		0.060"-0.105"		0.060"						2" × 2" × 3/6"		3-1/2"		3-3/8"	
		48"-60"	14"	0.064"-0.079"		0.064"						2" × 2" × 3/6"		3-1/2"		3-3/8"		5-1/2"
		48"-60"	14"	0.109"		0.064"						2" × 2" × 3/6"		3-1/2"		5-3/8"		
		66"-120"		0.064"-0.109"		0.064"						2" × 2" × 3/6"		5-1/2"		9-3/8"		
	3" × 1"	42"-60"	14"		0.060"-0.105"		0.060"						2" × 2" × 3/6"		3-1/2"		5-3/8"	
		42"-60"	14"		0.135"		0.075"						2" × 2" × 1/4"		3-1/2"		5-3/8"	
		66"-96"	25"		0.060"-0.135"		0.060"						2" × 2" × 1/4"		5-1/2"		7-3/8"	
		96"-108"	25"		0.135"		0.075"						2" × 2" × 1/4"		5-1/2"		7-3/8"	
		THROUGH 36"		0.064"-0.138"			0.060"					2" × 2" × 3/6"		3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
		42"-54"	12"		0.060"-0.105"		0.060"						2" × 2" × 3/6"	- 1711	3-1/2"	27.0	3-3/8"	- 17.11
	2 ² / ₃ " × ¹ / ₂ "	42"-60"		0.064"-0.079"		0.064"						2" × 2" × 3/6"	-0 -0 170	3-1/2"	n 17 II	3-3/8"	- 7/11	5-1/2"
	- 73 72	42"-60"		0.109"-0.168"	0.135"-0.164"		0.075"					2" × 2" × 1/4"	2" × 2" × 1/4"	3-1/2"	3-1/2"	5-3/8"	5-3/8"	
		66'-84"	24"	0.109"-0.168"		0.064"	0.105"					2" × 2" × 1/4"	all all I/II	5-1/2"	5-1/2"	7-3/8''	5-3/8"	
		66"-72"		0.064"-0.079"	0.164"		0.105					2" × 2" × 3/6"	2" × 2" × 1/4"	3-1/2"	5-72	3-3/8"	5-98	5-1/2"
HELICAL		48"-60" 48"-60"	14" 14"	0.064 -0.079		0.064"						2" × 2" × 3/6"		3-1/2"		5-% 5-3/8"		5-72
		66"-120"		0.064"-0.109"		0.064"						2" × 2" × 3/6"		5-1/2"		9-3/8"		
	3" × 1"	42"-60"	14"		0.060"-0.105"		0.060"						2" × 2" × 3/6"	3-72	3-1/2"	5-78	5-3/1"	
]	42"-60"	14"		0.135"		0.080						2" × 2" × 1/4"		3-1/2"		5-3/8"	
		66"-96"	25"		0.060"-0.135"		0.060"						2" × 2" × 1/4"		5-1/2"		7-3/8"	
		96"-108"	25"		0.135"		0.075"						2" × 2" × 1/4"		5-1/2"		7-3/8"	
		THROUGH 48"	101/2"	0.109"		0.064"		0.079"	1/2"	7∕8"	32 ksi						. 70	
		54"- 66"	101/2"	0.109"		0.064"		DOUBLE 0.079"	1/2"	7/8"	32 ksi							
		THROUGH 54"	101/2"	0.064"-0.079"		0.064"		0.079"	1/2"	7/8"	32 ksi							
	REROLLED END	THROUGH 60"	101/2"	0.138"		0.079"		DOUBLE 0.079"	1/2"	7/8"	32 ksi							
HUGGER	END	66"-72"	101/2"	0.138"		0.109"		DOUBLE 0.079"	1/2"	76"	32 ksi							
		THROUGH 72"	101/2"	0.168"		0.109"		DOUBLE 0.109"	1/2"	7/8"	45 ksi							
		48"-84"	101/2"	0.109"		0.079"		DOUBLE 0.079"	1/2"	7∕8"	32 ksi							
	3" x 1" REROLLED	48"-90"		0.064"-0.079"		0.064"		DOUBLE 0.079"	1/2"	7/8"	32 ksi							
	END	96"-102"	101/2"	0.079"		0.079"		DOUBLE 0.079"	1/2"	⅓"	32 ksi							
		90"-120"	101/2"	0.109"		0.109"		DOUBLE 0.109"	1/2"	⅓"	45 ksi							

								SPIRAL	RIB	PROF	TLE [ANGLE				
				PIPE WALL	THICKNESS	BAND TH	ICKNESS	(SSRP UNLT)			•	DIMEN	SIONS		_TS · Dia)	RIV ANGLE 1	ETS FO BAND	SPOT WELDS ANGLE TO BAND
COUPLING TYPE	PIPE CORRUGATION	PIPE SIZE	W	SSRP	ASRP	SSRP	ASRP	STRAP THICKNESS	BOLTS Dia		BAR YIELD STRENGTH	SSRP	ASRP	SSRP	ASRP	SSRP	ASRP	SSRP
	2 ² / ₇ " × 1/ ₃ " ×	24"-36"	12"	0.064"-0.109"	0.060"-0.105"	0.064"	0.060"	0.079"	1/2"	7∕8"	32 ksi	2" × 2" × 3/6"	2" × 2" × ¾6"	3-1/2"	3-1/2"	3-3/6"	3-3%"	5-1/2"
ANNULAR	$2^{2}/_{3}$ " × $1/_{2}$ " *	42"-60"	12"	0.064"-0.079"	0.075"-0.105"	0.064"	0.075"	0.079"	1/2"	7∕8"	32 ksi	2" × 2" × 3/6"	2" × 2" × 3/6"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	5-1/2"
ANNOLAN	REROLLED END	42"-60"	12"	0.109"		0.064"		0.079"	1/2"	7∕8"	32 ksi	2" × 2" × 1/4"		3-1/2"		5-3/8"		
		66"-84"	24"	0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi	2" × 2" × 1/4"		5-1/2"		7-3/8"		
	22/" > 1/2" >	24"-54"	101/2"	0.064"-0.079"		0.064"		0.079"	1/2"	7/8"	32 ksi							
HUGGER 22/3" × 1/2" *	24"-48"	101/2"	0.109"		0.064"		0.079"	1/2"	7/8"	32 ksi								
	THE ROLLED LIND	54"-66"	101/2"	0.109"		0.064"		Double 0.079"	1/2"	%"	32 ksi							

* See Note 13.

13. All profiles of Spiral Rib Pipe $(\frac{3}{4}" \times \frac{3}{4}" \text{ ribs at } 7\frac{1}{2}" \text{ pitch}$ and $\frac{3}{4}$ " x 1" ribs at $11\frac{1}{2}$ " pitch in both steel and aluminum and $\frac{3}{4}$ " x 1" ribs at $8\frac{1}{2}$ " pitch in steel only) shall be manufactured with rerolled ends. Corrugation profile of the rerolled ends shall be $2\frac{2}{3}$ " x $\frac{1}{2}$ " annual corrugations with a minimum of two full corrugations at each end.

DIST	COUNTY	ROUTE	POST MILES		SHEET NO.	TOTAL
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agents	shall not be	rnia or its offi responsible for electronic copie			CAL IFORM	

To accompany plans dated _

NOTES:

- 1. All ferrous metal coupling band connection hardware shall be galvanized or electroplated in accordance with the Standard Specifications.
- 2. For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
- 3. Tension strap may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
- 4. Use $1\frac{1}{4}$ " gage line dimension on attached angle leg for rivets and spot welds.
- 5. Band thickness shall not be less than:
 - a. 3 standard thicknesses lighter than the thickness of the pipe for Corrugated Steel Pipe.
 - b. 2 standard thicknesses lighter than the thickness of the pipe and in no case lighter than 0.060" for Corrugated Aluminum Pipe.
- 6. Dimensions, thicknesses and strengths shown are minimum.
- 7. For pipe arches use same width band as for round pipe of equal periphery.
- 8. Fillet welds of equivalent strength may be substituted for spot welds or rivets.
- 9. Spot welds shall develop minimum required strength of strap.
- Pipe with rerolled ends having at least two $2^{2}/_{3}$ " x $1/_{2}$ " annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having $2^2/_3$ " x $1/_2$ "
- corrugations. 11. In the case of H-12 huggerbands, two piece bands are required for diameters through 96" and three piece bands are required for diameters 102" through 120".
- 12. Two piece bands are required for pipes greater than 42" diameter.

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

CORRUGATED METAL PIPE COUPLING DETAILS No. 6 **POSITIVE JOINT**

NO SCALE

RSP D97F DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97F DATED MAY 1, 2006 - PAGE 188 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97F

ANNULAR AND HELICAL PROFILE

								BAI	R AND STRAI	•			ANGLE				
									CSP ONLY)		DIMEN	SIONS		LTS	RIV		SPOT WELDS
001101 7110	DIDE	סוסר		PIPE WALL	THICKNESS	BAND TH	ICKNESS		DOL TO	BAR	DIMEN		(No	Dia)	ANGLE	TO BAND	ANGLE TO BAND
	CORRUGATION	PIPE SIZE	W OR A	CSP	CAP	CSP	CAP	STRAP THICKNESS	BOLTS Dia	Dia	CSP	CAP	CSP	CAP	CSP	CAP	CSP
TWO PIECE INTEGRAL	1½' × ¼"	6"	7"	0.064"-0.168"		0.052"							3-3/8"				
FLANGE	1½' × ¼"	8"-10"	7''	0.064"-0.168"	0.060"-0.164"	0.064"	0.060"						3-3/8"	3-3/8"			
ANNULAR		THROUGH 24"		0.064"-0.168"	0.060"-0.164"	0.064"	0.060"				2" × 2" × ¾6"	2" × 2" × ¾6"	3-1/2"	3-1/2"	3-3/8"	3-3%"	3-1/2"
HUGGER	2 ² / ₃ " × 1/ ₂ " REROLLED END	THROUGH 24"	101/2"	0.064"-0.168"		0.064"		0.079"	1/2"	7 ⁄8''							

SPIRAL	RIB	PROFIL	F

													ANGLE				
				PIPE WALL	THICKNESS	BAND TH	IICKNESS		AND STRAP SRP ONLY)		DIMEN	SIONS		LTS - Dia)	RIV ANGLE 1	ETS O BAND	SPOT WELDS ANGLE TO BAND
COUPL TYP		PIPE SIZE	w	SSRP	ASRP	SSRP	ASRP	STRAP THICKNESS	BOLTS Dia	BAR Dia	SSRP	ASRP	SSRP	ASRP	SSRP	ASRP	SSRP
ANNUL	.AR 22/3" × 1/2" * REROLLED END		12"	0.064"-0.168"	0.060"-0.164"	0.064"	0.060"				2" × 2" × 3/6"	2" × 2" × 3/6"	3-1/2"	3-1/2"	3-3/8"	3-3/8"	3-1/2"
HUGG	ER 22/3" × 1/2" * REROLLED END	24"	101/2"	0.064"-0.168"		0.064"		0.079"	1/2"	7∕8"							

^{*} See Note 12.

12. All profiles of Spiral Rib Pipe ($\frac{\pi}{4}$ " x $\frac{\pi}{4}$ " ribs at $7\frac{1}{2}$ " pitch and $\frac{\pi}{4}$ " x 1" ribs at $11\frac{1}{2}$ " pitch in both steel and aluminum and $\frac{\pi}{4}$ " x 1" ribs at $8\frac{1}{2}$ " pitch in steel only) shall be manufactured with rerolled ends. Corrugation profile of the rerolled ends shall be $2\frac{\pi}{4}$ " x $\frac{1}{2}$ " annual corrugations with a minimum of two full corrugations at each end.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL							
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The State of California or its officers or openits shall not be responsible for the occurracy or completeness of electronic copies of this plan street.												

NOTES. To accompany plans dated _

- All ferrous metal coupling band connection hardware shall be galvanized or electroplated in accordance with the Standard Specifications.
- For helically corrugated coupling bands, the connection angles may be oriented parallel to the pipe axis, provided connecting holes are slotted lengthwise sufficiently to allow adjustment for the helix angle.
- Tension strap may be connected to band with either spot welds or fillet welds that develop minimum required strength of strap.
- 4. Use $1\frac{1}{4}$ " gage line dimension on attached angle leg for rivets and spot welds.
- 5. Band thickness shall not be less than:
 - 3 standard thicknesses lighter than the thickness of the pipe for Corrugated Steel Pipe.
 - 2 standard thicknesses lighter than the thickness of the pipe and in no case lighter than 0.060" for Corrugated Aluminum Pipe.
- Dimensions, thicknesses and strengths shown are minimum.
- For pipe arches use same width band as for round pipe of equal periphery.
- Fillet welds of equivalent strenght may be substituted for spot welds or rivets.
- Spot welds shall develop minimum required strength of strap.
- 10. Pipe with rerolled ends having at least two $2^2/3$ " x 1/2" annular corrugations at each end with or without an upturned flange may be connected with any of the annular coupling bands shown for pipe of the same diameter and wall thickness and having $2^2/3$ " x 1/2" corrugations.
- 11. For downdrain applications, two piece integral flange couplers shall have factory applied sleeve type rubber gaskets with a minimum length of 7" measured along the length of the pipe.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

CORRUGATED METAL PIPE COUPLING DETAILS No. 7 DOWNDRAIN

NO SCALE

RSP D97G DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN D97G DATED MAY 1, 2006 - PAGE 189 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP D97G

4-4-08

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ELECTROLIERS High mast light pole STANDARD TYPES Double Arm lighting standard 15, 15D ()- - c Existing electrolier 15 STRUCTURE 21, 21D STRUCTURE Electrolier foundation (Future installation) 30 NOTES: 1. Luminaires shall be 310 W HPS when installed on Type 21, 210, 30, 31, 32, 35 and 36-20A Standards, unless otherwise specified. Luminaires shall be 200 W HPS when installed on other type 31 32 standards or poles, unless otherwise 35 2. Luminaires shall be the cutoff type, ANSI Type Ⅲ medium cutoff lighting distribution, unless otherwise specified. 36-20A 3. Variations noted adjacent to symbol on project plans. Electrolier (see project notes or project plans) STANDARD NOTES: AB Abandon. If applied to conduit, remove conductors. BC Install pull box in existing conduit run. BP Pedestrian barricade, type as indicated on plan. CB Install conduit into existing pull box. Connect new and existing conduit. Remove existing conductors and install conductors as indicated. Conduit to remain for future use, Remove conductors, Install pull wire or rope. Detector handhole. FA Foundation to be abandoned. IS Install sign on signal mast arm. NS No slip base on standard. PEC Photoelectric control. PEU Photoelectric unit. RC Equipment or material to be removed and become the property of the Contractor.

RE Remove electrolier, fuses and ballast. Tape ends of conductors.

Standard to remain for future use, Remove luminaire, pole

RL

RS

SD

Relocate equipment.

Remove and reuse equipment.

Service disconnect.

TSP Telephone service point.

Remove and salvage equipment.

SC Splice new to existing conductors.

conductors, fuses and ballast.

ABBREVIATIONS AND EQUIPMENT DESIGNATIONS PROPOSED EXISTING

BBS	bbs	Battery backup system
BC	bc	Bolt circle
С	С	Conduit
CCTV	cctv	Closed circuit television
CKT	ck†	Circuit
CMS	cms	Changeable message sign
DLC	dlc	Loop detector lead-in cable
EMS	ems	Extinguishable message sign
EVC	evc	Emergency vehicle cable
EVD	evd	Emergency vehicle detector
FB	fb	Flashing beacon
FBCA	fbca	Flashing beacon control assembly
FBS	fbs	Flashing beacon with slip base
FO	fo	Fiber optic
G	G	Ground (Equipment Grounding Conductor)
GFCI	GFCI	Ground fault circuit interrupt
HAR	har	Highway advisory radio
HEX	hex	Hexagonal
HPS IISNS	hps	High pressure sodium
ISL	iisns isl	Internally illuminated street name sign
LED		Induction sign lighting
LMA	led Ima	Light emitting diode Luminaire mast arm
LPS	lps	Low pressure sodium
LTG	I†g	Lighting
LUM	lum	Luminaire
MAT	mat	Mast arm mounting vehicle signal faces,
		top attachment
MAS	mas	Mast arm mounting vehicle signal faces,
		side attachment
MAS-4A	mas-4A	Mast arm mounting vehicle signal faces,
MAS-4B	mas-4B	side attachment - 4 signal section
MAS-4C	mas-4C	•
MAS-5A	mas-5A	Mast arm mounting vehicle signal faces,
MAS-5B	mas-5B	side attachment - 5 signal section
MC	mc	Mercury contactor
M/M	m/m	Multiple to multiple transformer
MT	m†	Conduit with pull wire or rope only
MTG	m†g	Mounting
	m∨	Mercury vapor lighting fixture
N NC	N	Neutral (Grounded Conductor)
NC NO	NC NO	Normally closed
PB		Normally open Pull box
PEC	pb pec	Photoelectric control (Type I, II, III, III or
FEC	pec	I as shown)
PED	ped	Pedestrian
PEU	peu	Photoelectric unit
PPB	ppb	Pedestrian push button
RL	FF-	Relocated equipment
RM	rm	Ramp metering
SB	sb	Slip base
SIC	sic	Signal interconnect cable
SIG	sig	Signal
SMA	sma	Signal mast arm
SNS	sns	Street name sign
SP	sp	Service point
TDC	†dc	Telephone demarcation cabinet
TMS	†ms	Traffic monitoring station
TOS	tos	Traffic Operations System
VEH	veh	Vehicle
XFMR	xfmr	Transformer
COMM RWIS	comm rwis	Communication
KMID	rwis	Roadway weather information system

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL
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agents	shall not be	rnia or its offi responsible for electronic copie		ECTRICAL F CAL IFORM	

To accompany plans dated _

SOFFIT AND WALL MOUNTED LUMINAIRES

Pendant, 70 W HPS unless otherwise specified.

Flush, 70 W HPS unless otherwise specified.

₩all surface, 70 W HPS unless otherwise specified.

← Existing soffit or wall luminaire to remain unmodified.

Existing soffit or wall luminaire to be modified as specified.

NOTE:

Arrow indicates "street side" of luminaire.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

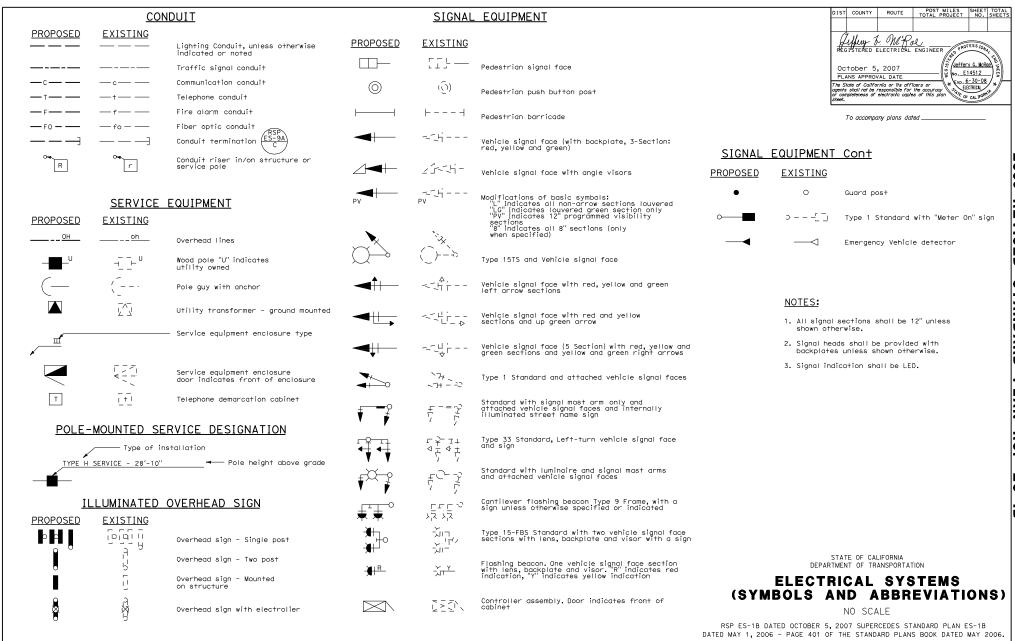
ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

NO SCALE

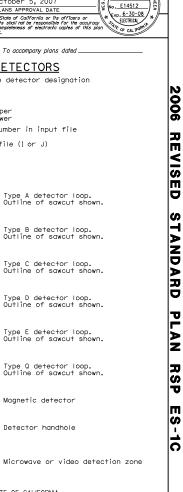
RSP ES-1A DATED OCTOBER 5, 2007 SUPERSEDES STANDARD PLAN ES-1A DATED MAY 1, 2006 - PAGE 400 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1A

7-10-0



REVISED STANDARD PLAN RSP ES-1B



POST MILES SHEET TOTAL TOTAL PROJECT NO. SHEETS

Jeffery G. McRae

STATE OF CAL IFOR

DIST COUNTY

October 5, 2007

PLANS APPROVAL DATE

ROUTE

Lyfung D. M. Rol REGISTERED ELECTRICAL ENGINEER

To accompany plans dated _

Type A detector loop.

Type B detector loop.

Type C detector loop.

Outline of sawcut shown.

Type D detector loop. Outline of sawcut shown.

Type E detector loop.

Type Q detector loop.

Magnetic detector

Detector bandhale

Outline of sawcut shown.

Outline of sawcut shown.

Outline of sawcut shown.

Outline of sawcut shown.

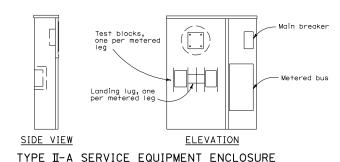
WIRING DIAGRAM LEGEND **EQUIPMENT IDENTIFICATION** External conductor ILLUMINATED SIGN IDENTIFICATION NUMBER: Conductor or bus Circuit breaker Tie point Sign number - Place on post or structure Ampere Contactor coil The State of California or its afficers or agents shall not be responsible for the accuracy or completeness of electronic copies of this pla Volt Sign No. 12345 Contactor, Contact NO Metered 10 ISL SCI 1.0 (8) Unmetered Terminal blocks Transformer rating (kVA) Do <u>NOT</u> place NR Neutral bus Contactor, Contact NC - Lighting control type on standard or GB Ground bus Enclosure bond structure Equipment grounding conductor — Number and type of fixtures∫ Grounded conductor (Neutral) VEHICLE DETECTORS Grounding electrode ELECTROLIER OR EQUIPMENT IDENTIFICATION NUMBER: Vehicle detector designation 12345, - 15'-0" → Circuit breaker 5 J 9 U Mast arm length, if shown. Do not place on standard or structure. Receptacle U = Upper Equipment number - Place on standard or L = Lower structure. Existing equipment numbers are shown in parenthesis PULL BOXES Slot number in input file EXISTING **PROPOSED** Input file (I or J) CONDUIT AND CONDUCTOR IDENTIFICATION: Pull box-No. 5 unless otherwise indicated or noted. Phose 11/2"C, 2#10, 15#14, 2 DLC/ Number and size of conductors and cables **PROPOSED EXISTING** 9A(21) Pull box-Additional designations or - Size of conduit in inches descriptions Ø1, Ø2, Ø2P, etc. Traffic phase identification for signal faces, (C) = Communications pull box detectors and phase diagrams $3 = \text{No. } 3\frac{1}{2} \text{ pull box}$ (E) = Pull box with extension 5 = No. 5 pull box 1 2 3 Project note numbers (S) = Sprinkler control pull box 6 = No. 6 pull box (A) (B) (C) Equipment description, installation or item numbers (21) = Anchor bolts and conduit for 7 = No. 7 (Ceiling pull box) future installation of Type 21 8 = No. 8 (Pendant soffit pull box) 1 2 3 Conduit run numbers Standard 9 = No. 9 pull box (T) = Traffic pull box SIGNAL AND LIGHTING STANDARD (TYPICAL DESIGNATION): 9A = No. 9A pull box 194/-3/-100/ Wind velocity = 100 mph - Case 3 arm Ioadina - Standard type - Standard Plan sheet number ∼ Detail number or letter MISCELLANEOUS EQUIPMENT **EXISTING PROPOSED** Changeable message sign 123 Closed circuit television camera a Highway advisory radio pole and antenna dh Li ____jems **FMS** Extinguishable message sign Detection device M = Microwave sensor V = Video image sensor

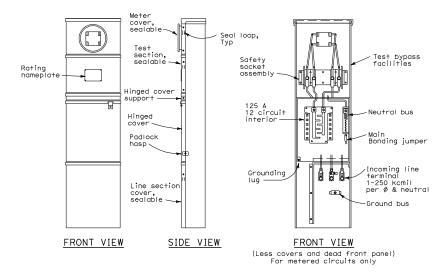
STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SYMBOLS AND ABBREVIATIONS)

RSP ES-1C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-1C DATED MAY 1, 2006 - PAGE 402 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-1C





TYPE II-B SERVICE EQUIPMENT ENCLOSURE



To accompany plans dated __

NOTES-TYPE I SERVICE EQUIPMENT ENCLOSURES:

- Service equipment enclosures and metering equipment shall meet the requirements of the service utility.
- Service equipment enclosures shall be factory wired NEMA 3R construction and shall be provided with dead front panel and provisions for padlocking.
- Control wiring shall be 600 V, No. 14 AWG stranded (THHN) machine tool wire. Where subject to flexing, 19 strand wire shall be used.
- 4. Main bus shall be rated for 125 A and shall be tin-plated copper.
- An engraved phenolic nameplate on the dead front panel indicating the function of each circuit or device shall be installed with stainless steel rivets or stainless steel screws:
 - a) Adjacent to the breaker or device with character size a minimum of $\frac{1}{8}$ ".
 - b) At the top of the exterior door panel indicating system number, voltage level and number of phases with character size a minimum of $\frac{1}{2}$ ".
- A plastic laminated wiring diagram shall be provided and attached to the inside of the front door.
- In unpaved areas, a raised portland cement concrete pad of 2'-0" x 4" x width of service equipment enclosure foundation or controller cabinet foundation shall be constructed in front of Type II service equipment enclosure.
- Internal bus, where shown, is typical only. Alternative designs of proposed service equipment enclosure shall be submitted to the Engineer for approval.
- 9. Circuit breakers may be mounted in the vertical or horizontal position.
- Dimensions of service equipment enclosures shall meet the requirements of the service utility.
- Minimum clearance shall be required for front and back of service equipment enclosures per National Electrical Code, Article 110.26, "Spaces About Electrical Equipment (600 Volts, Nominal, or Less)."

STATE OF CALIFORNIA

ELECTRICAL SYSTEMS (SERVICE EQUIPMENT TYPE II SERIES)

NO SCALE

RSP ES-2B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2B DATED MAY 1, 2006 - PAGE 404 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-2B

NOTES-TYPE III SERVICE EQUIPMENT ENCLOSURES:

- Service equipment enclosure and metering equipment shall meet the requirements of the service utility. The meter area shall have a sealable, lockable, weathertight cover that can be removed without the use of tools.
- Service equipment enclosures shall be factory wired and conform to NEMA standards.
- Dimensions of service equipment enclosures shall meet the requirements of the service utility.
- 4. The dead front panels on Type II service equipment enclosures shall have a continuous stainless steel or aluminum piano hinge. The panel in front of the breakers shall be secured with a latch or captive screws. No live parts shall be mounted on the dead front panel.
- 5. The exterior door shall have provisions for padlocking. The padlock hole shall be a minimum diameter of $\frac{1}{16}$ ".
- 6. Enclosures housing transformers of more than one kVA shall have effective screened ventilation louver of not less than 50 square inches. Screen shall be stainless steel No. 304, with a No. 10 size mesh. Framed screen shall be secured with at least four bolts.
- Fasteners on the exterior of the enclosure shall be vandal-resistant and shall not be removable from the exterior. Exterior screws, nuts, bolts and washers shall be stainless steel.
- 8. Landing lugs for incoming service conductors shall be compatible with either copper or aluminum conductors sized to suit the conductors shown on the plan. Landing lugs shall be copper or tin-plated aluminum. Neutral bus shall be rated for 125 A and be suitable for copper or aluminum conductors unless otherwise specified. The terminal shall include but not be limited to:
 - a) Incoming terminals (landing lugs)
 - b) Neutral lugs
 - c) Solid neutral terminal strip
- At least 6 standard single pole circuit breaker spaces, ¾" nominal, shall be provided for branch circuits. Circuit breaker interiors shall be copper. Interiors of enclosure shall accept plug-in or cable-in/cable-out circuit breakers.
- 10. Control wiring shall be 600 V, 14 stranded machine tool wire. Where subject to flexing, 19 strand wire shall be used.
- 11. Main bus shall be rated for 125 A and shall be tin-plated copper.
- 12. A plastic laminated wiring diagram shall be provided with brass mounting eyelets and attached to the inside of the enclosure and the wiring diagram shall be affixed to the interior with a UL or ETL approved method.

- 13. An engraved phenolic nameplate on the dead front panel indicating the function of each circuit or device shall be installed with stainless steel rivets or stainless steel screws:
 - a) Adjacent to the breaker or device with character size a minimum of $\frac{1}{8}$.
 - b) At the top of the exterior door panel indicating State system number, voltage level and number of phases with character size a minimum of $\S_c^{\rm u}$
- 14. The plan shows the approximate location of devices within the enclosure. Components may be rearranged, however, the "working" clearances within the service equipment enclosure shall be maintained.
- 15. In unpaved areas a raised portland cement concrete pad 2'-0" x 4" x width of foundation shall be constructed in front of new service equipment enclosure installation. Pad shall be set to elevation of foundation.
- 16. Foundation shall extend 2" minimum beyond edge of service equipment enclosure.
- 17. Internal bus, where shown, is typical only. Alternative design of proposed service equipment enclosure shall be submitted to the Engineer for approval.
- 18. Plug-in circuit breakers may be mounted in the vertical or horizontal position. Cable-in/cable-out circuit breakers shall be mounted in the vertical position.
- 19. Type II—AF and Type II—BF service equipment enclosures shall have the meter viewing windows located on the front side of the service equipment enclosures.
- 20. Type II-AR and Type II-BR service equipment enclosures shall be similarly constructed as Type III-AF and Type III-BF respectively, except the meter viewing windows shall be located on the back side of the service equipment enclosures.
- 21. Minimum clearance shall be required for front and back of service equipment enclosure per National Electrical Code, Article 110.26, "Spaces About Electric Equipment (600 Volts, Nominal, or Less)."

DIST COUNTY ROUTE POST MILES SHEET TOTAL TOTAL PROJECT NO. SWEET:

AUTHOR TO THE PROJECT NO. SWEET:

OCTOBER 5, 2007

PLANS APPROVAL DATE
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To accompany plans	dated

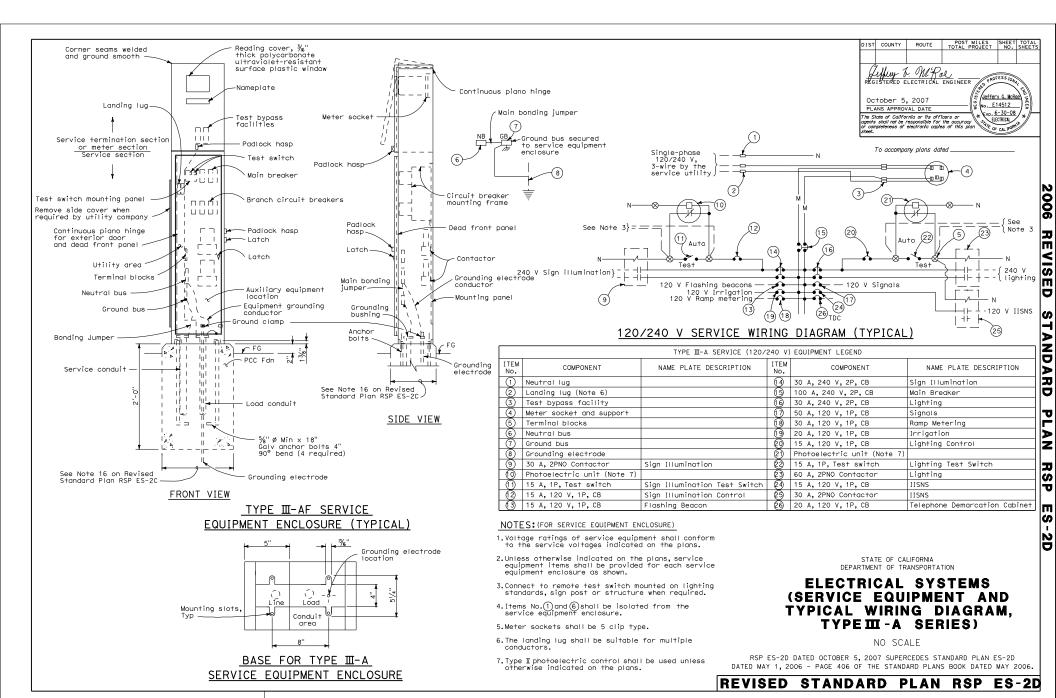
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SERVICE EQUIPMENT NOTES TYPE III SERIES)

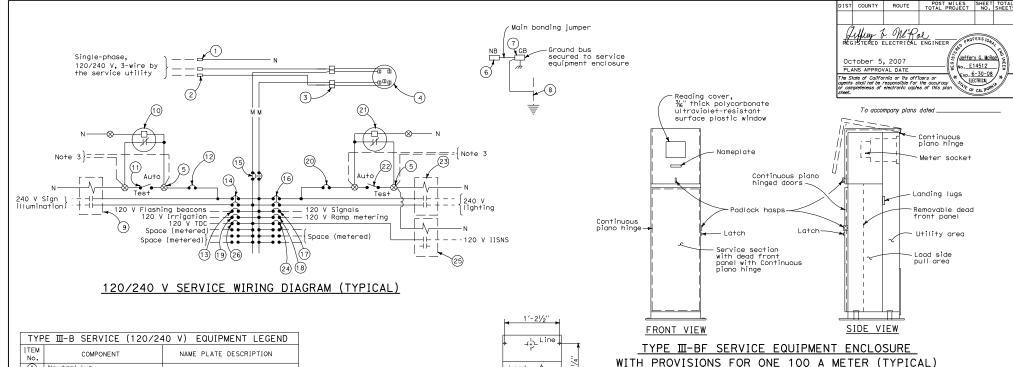
NO SCALE

RSP ES-2C DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2C DATED MAY 1, 2006 - PAGE 405 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-2C



7-10-07

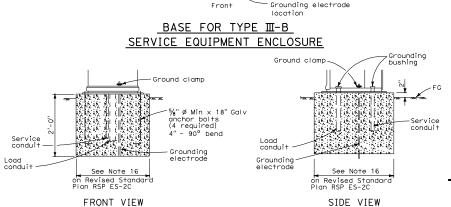


Load

area

conduit

TYP	E III-B SERVICE (120/24	40 V) EQUIPMENT LEGEND						
ITEM No.	COMPONENT	NAME PLATE DESCRIPTION						
1	Neutral lug							
② ③	Landing lug (Note 6)							
3	Test bypass facility							
(4)	Meter socket and support							
(5)	Terminal blocks							
<u>6</u>	Neutral bus							
7	Ground bus							
8	Grounding electrode							
9	30 A, 2PNO Contactor	Sign Illumination						
(0)	Photoelectric unit (Note 7)							
Ũ	15 A, 1P, Test switch	Sign Illumination Test Switch						
12	15 A, 120 V, 1P, CB	Sign Illumination Control						
(3)	15 A, 120 V, 1P, CB	Flashing Beacon						
14	30 A, 240 V, 2P, CB	Sign Illumination						
13	100 A, 240 V, 2P, CB	Main Breaker						
(E)	30 A, 240 V, 2P, CB	Lighting						
17	50 A, 120 V, 1P, CB	Signals						
18	30 A, 120 V, 1P, CB	Ramp Metering						
19	20 A, 120 V, 1P, CB	Irrigation						
(1) (2) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4	15 A, 120 V, 1P, CB	Lighting Control						
2	Photoelectric unit (Note 7)							
23	15 A, 1P, Test switch	Lighting Test Switch						
23	60 A, 2PNO Contactor	Lighting						
23	15 A, 120 V, 1P, CB	IISNS						
23	30 A, 2PNO Contactor	IISNS						
29	20 A, 120 V, IP, CB	Telephone Demarcation Cabinet						



TYPE III-B SERVICE EQUIPMENT
ENCLOSURE FOUNDATION DETAILS

NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)

- Voltage ratings of service equipment shall conform to the service voltages indicated on the plans.
- 2. Unless otherwise indicated on the plans, service equipment items shall be provided for each service equipment enclosure as shown.
- Connect to remote test switch mounted on lighting standards, sign post or structure when required.
- 4. Items No. (1) and (6) shall be isolated from the service equipment enclosure.
- 5. Meter sockets shall be 5 clip type.
- 6. The landing lug shall be suitable for multiple conductors.
- Type I photoelectric control shall be used unless otherwise indicated on the plans.

STATE OF CALIFORNIA
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ELECTRICAL SYSTEMS (SERVICE EQUIPMENT AND TYPICAL WIRING DIAGRAM, TYPE III-B SERIES)

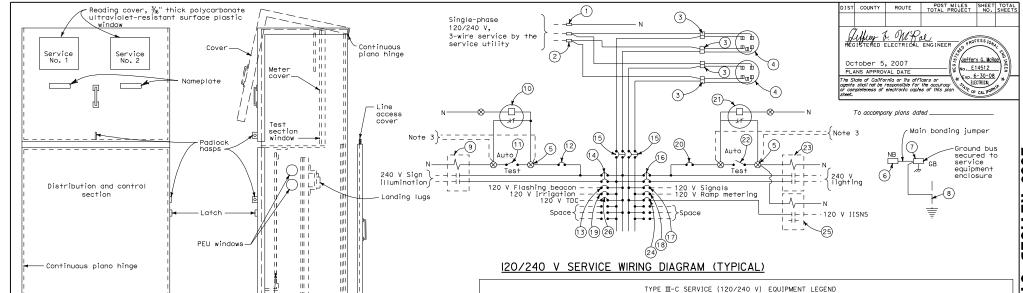
NO SCALE

RSP ES-2E DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2E DATED MAY 1, 2006 - PAGE 407 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-2E

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ITEM

No.

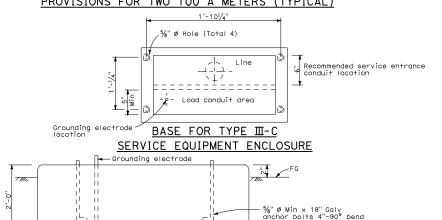
TYPE III-CF SERVICE EQUIPMENT ENCLOSURE WITH PROVISIONS FOR TWO 100 A METERS (TYPICAL)

See Note 16 on

Revised Standard Plan RSP ES-2C

FOUNDATION DETAIL

FRONT VIEW



UI I

11.1

11 1

SIDE VIEW

(4 required)

100

100

	Neutral lug		(14)	30 A, 240 V, 2P, CB	Sign Illumination
2	Landing lug (Note 6)		15)	100 A, 240 V, 2P, CB	Main Breaker
3	Test bypass facility		16	30 A, 240 V, 2P, CB	Lighting
4	Meter socket and support		17	50 A, 120 V, 1P, CB	Signals
(5)	Terminal blocks		(18)	30 A, 120 V, 1P, CB	Ramp Metering
6	Neutral bus		19	20 A, 120 V, 1P, CB	Irrigation
7	Ground bus		20)	15 A, 120 V, 1P, CB	Lighting Control
8	Grounding electrode		21)	Photoelectric unit (Note 7)	
9	30 A, 2PNO, Contactor	Sign Illumination	22)	15 A, 1P, Test switch	Lighting Control
10	Photoelectric unit (Note 7)		23	60 A, 2PNO Contactor	Lighting
11)	15 A, 1P, Test switch	Sign Illumination Test Switch	24)	15 A, 120 V, 1P, CB	IISNS
(12)	15 A. 120 V. 1P. CB	Sign Illumination Control	(25)	30 A. 2PNO Contactor	IISNS

No.

(26)

NAME PLATE DESCRIPTION

Flashing Beacon

NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)

(13) 15 A, 120 V, 1P, CB

COMPONENT

- Voltage ratings of service equipment shall conform to the service voltages indicated on the plans.
- 2. Unless otherwise indicated on the plans, service equipment items shall be provided for each service equipment enclosure as shown.
- Connect to remote test switch mounted on lighting standards, sign post or structure when required.
- 4. Items No.(1) and (6) shall be isolated from the service equipment enclosure.
- 5. Meter sockets shall be 5 clip type.
- 6. The landing lug shall be suitable for multiple conductors.
- 7. Type $\mathbb I$ photoelectric control shall be used unless otherwise indicated on the plans.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

COMPONENT

20 A, 120 V, 1P, CB

ELECTRICAL SYSTEMS (SERVICE EQUIPMENT AND TYPICAL WIRING DIAGRAM TYPEII - C SERIES)

NO SCALE

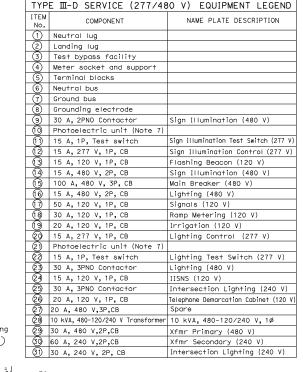
RSP ES-2F DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2F DATED MAY 1, 2006 - PAGE 408 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-2F

- NOTES: (FOR SERVICE EQUIPMENT ENCLOSURE)
- Voltage ratings of service equipment shall conform to the service voltages indicated on the plans.
- Unless otherwise indicated on the plans, service equipment items shall be provided for each service equipment enclosure as shown.
- Connect to remote test switch mounted on lighting standards, sign post or structure when required.
- 4. Items No. 1) and 6) shall be isolated from the service equipment enclosure.
- 5. Meter sockets shall be the 7 clip type.
- The landing lug shall be suitable for multiple conductors.
- Type I photoelectric control shall be used unless otherwise indicated on the plans.
- 8. Service pedestal shall meet the requirements of EUSERC 308 or 309 in addition to the information given
- Color of insulation of the neutral shall be gray for the 277/480 V system and shall be white for the 120/240 V system.
- 10. 120/240 V transformer grounded circuit conductor (neutral conductor).
- 11. 120/240 V transformer grounding electrode conductor.
- 12. 120/240 V system neutral bus and ground bus.
- 13. 120/240 V enclosure bonding jumper.

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL SHEETS									
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October 5, 2007														
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acents	The State of California or its officers or the span shall not be responsible for the occurracy or completeness of electronic copies of this plan													

To accompany plans dated _



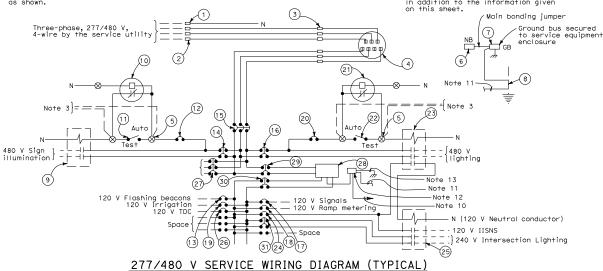
STATE OF CALIFORNIA
Service conduit DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS
(SERVICE EQUIPMENT AND
TYPICAL WIRING DIAGRAM,
TYPE III -D SERIES)

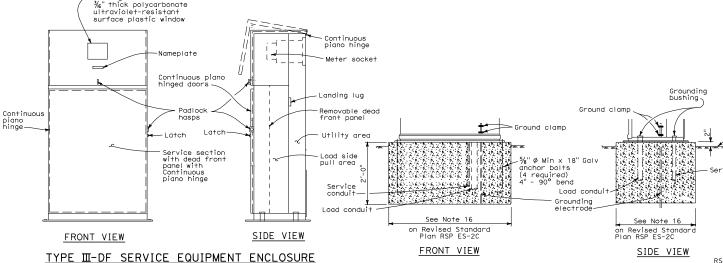
NO SCALE

RSP ES-2G DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-2G DATED MAY 1, 2006 - PAGE 409 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-2G

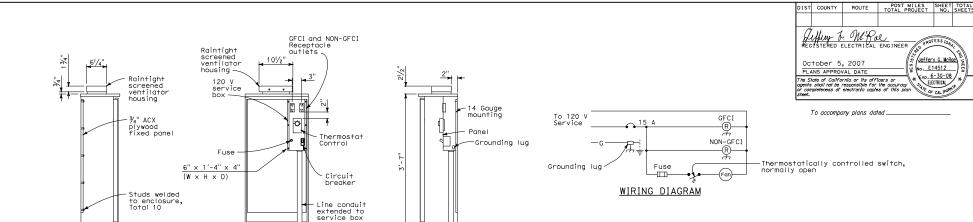


WITH PROVISIONS FOR ONE 100 A METER (TYPICAL)



TYPE III-D SERVICE EQUIPMENT ENCLOSURE FOUNDATION DETAILS

9_1



1'-8

1'-6"

BASE PLAN

0 0 0

SECTION B-B

 $1\frac{1}{8}$ " x $\frac{3}{4}$ " slots, Typ

Filtered ventilation

-HS galvanized

anchor rods (4) %" x 1'-6" x 4"

Conduit to 120 V service

To telephone service

1/16

1'-8"

FRONT VIEW

(Exterior door removed for clarity)

A) | (B)

SOUR DE

<u>"</u>[[] [] []

1111 11

U I

2'-0"

FRONT VIEW

1.1

114

2"C to controller cabinet

SECTION A-A

Padlockable

draw latch

Ground clamp

Cast in place

foundation

Grounding electrode

Finished

grade

Continuous stainless steel piano hinge —

113/4"

- 11

-11

H II

H | ji |

П

 $\Gamma =$

11 | 1

1'-3"

SIDE VIEW

NOTES:

- Telephone demarcation cabinet shall be furnished with a mounting panel, outlets, circuit breaker and deadfront plates in place. Dimensions are nominal.
- An approved mastic or caulking compound shall be placed on the foundation prior to placing the cabinet to seal openings between the bottom of the cabinet and the foundation.
- In unpaved areas, a raised PCC pad shall be placed in front of the telephone demarcation cabinet. Pad shall be 2'-0" x 1'-10" x 4" thick, with 2" above the finished grade.
- 4. All conduits shall be bonded to the enclosure.
- 5. Telephone demarcation cabinet:
 - a) Material shall be anodized aluminum ($\frac{1}{8}$ " thick).
 - b) Fabrication shall conform to the requirements of the Standard Specifications.
 - c) The exterior door shall be side hung and secured with a padlockable draw latch, the padlock hole shall be a minimum diameter of \(\frac{\pi}{6} \)" to receive a padlock.
 - d) Ventilation louvers shall be located on the door.
 - e) Fan shall be mounted in a ventilator housing.
 - f) Fan shall be thermostatically controlled and adjustable to turn on between 80°F and 130°F.
 - g) Fan circuit shall be fused at 175 percent of the fan motor capacity.
 - h) Fan capacity shall be at least 25 cubic feet per minute.
 - i) Fasten fixed mounting panels with nuts, lock and flat washers to $\frac{3}{6}$ " \emptyset x 1" studs welded to enclosure.

STATE OF CALIFORNIA
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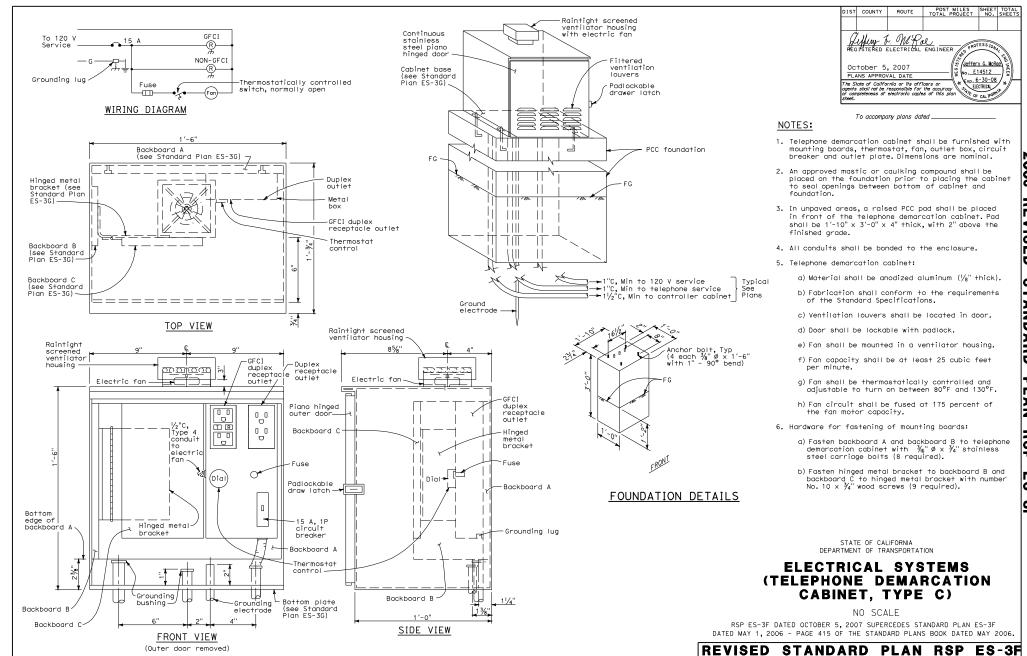
ELECTRICAL SYSTEMS (TELEPHONE DEMARCATION CABINET, TYPE B)

NO SCALE

RSP ES-3E DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-3E DATED MAY 1, 2006 - PAGE 414 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-3E













TUNNEL FULL CIRCLE

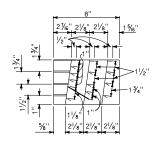
 $8" \pm 1/2"$ for 8" sections

L CIRCLE CAP OR CUT AWAY

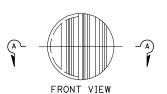
CODC (Ri

VISORS

(Right angle is reversed of figure)



SECTION A-A



DIRECTIONAL LOUVER

Type Lt-2-T signal mounting

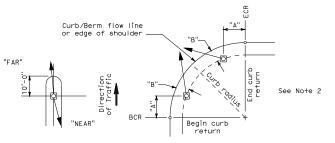
Directional louvers shall be oriented as directed by the Engineer and secured in place with one plated brass machine screw and nut.

U-TURN SIGNAL

FACE



To accompany plans dated ___



NOTES:

- Typical signal pole placement unless dimensioned on plans.
- For "A" and "B" dimensions, see Pole Schedule, or as directed by the Engineer.

SIGNAL STANDARD PLACEMENT DIMENSIONS AND EQUIPMENT LOCATIONS







LANE CONTROL SIGNAL FACE



LANE CONTROL SIGNAL FACE

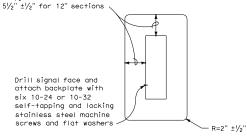
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (SIGNAL HEADS AND MOUNTINGS)

NO SCALE

RSP ES-4C DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN ES-4C DATED MAY 1, 2006 - PAGE 420 OF THE STANDARD PLANS BOOK DATED MAY 2006.

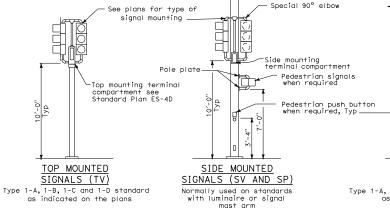
REVISED STANDARD PLAN RSP ES-4C

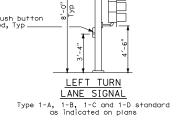


8" AND 12" SECTIONS

BACKPLATE

//6" minimum thickness 3001-14 aluminum, or plastic when specified



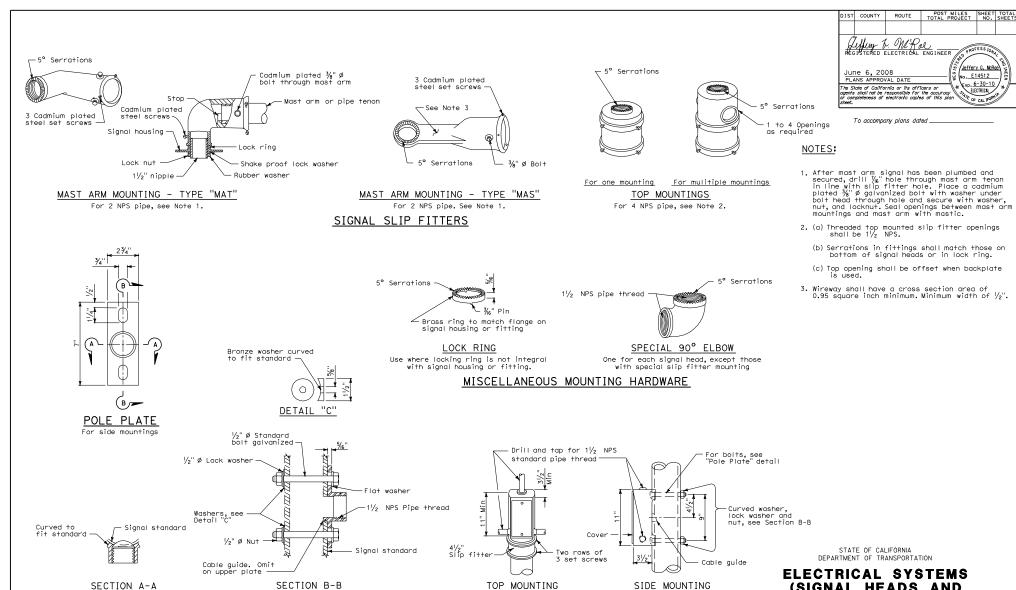


Toward

Intersection

TYPICAL SIGNAL INSTALLATIONS





TERMINAL COMPARTMENTS

SECTION A-A

SECTION B-B

RSP ES-4D DATED June 6, 2008 SUPERSEDES STANDARD PLAN ES-4D DATED MAY 1, 2006 - PAGE 421 OF THE STANDARD PLANS BOOK DATED MAY 2006.

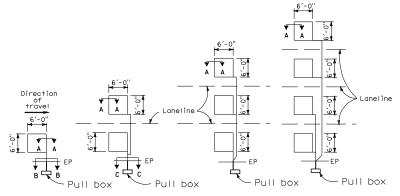
REVISED STANDARD PLAN RSP ES-4D

(SIGNAL HEADS AND

MOUNTINGS) NO SCALE

LOOP INSTALLATION PROCEDURE

- 1. Loops shall be centered in lanes.
- Saw slots in pavement for loop conductors as shown in details.
- Distance between side of loop and a lead-in saw cut from adjacent detectors shall be 2^\prime-0 " minimum. Distance between lead-in saw cuts shall be 6" minimum.
- Bottom of saw slot shall be smooth with no sharp edges.
- Slots shall be washed until clean, blown out and thoroughly dried before installing loop conductors.
- Adjacent loops on the same sensor unit channel shall be wound in opposite directions.
- Identify and tag loop circuit pairs in the pull box with loop number, stort (S) and finish (F) of conductor. Identify and tag lead-in-cable with sensor number and phase.
- Install loop conductor in slot using a $\frac{3}{16}$ " to $\frac{1}{4}$ " thick wood paddle. Hold loop conductors with wood paddles (at the bottom of the sawed slot) during sealant placement.
- No more than 2 twisted pairs shall be installed in one sawed slot.
- Allow additional 5'-0" of slack length of conductor for the lead-in run 10. to pull box.
- The additional length of each conductor for each loop shall be twisted together into a pair (6 turns per 3'-4" minimum) before being placed in the slot and conduit leading to pull box.
- 12. Test each loop circuit for continuity, circuit resistance and insulation resistance at the pull box before filling slots.
- 13. Fill slots as shown in details.
- 14. Splice loop conductors to lead-in-cable. Splices shall be soldered.
- 15. End of lead-in-cable and Type 2 loop conductor shall be waterproofed prior to installing in conduit to prevent moisture from entering the cable.
- 16. Lead-in-cable shall not be spliced between the pull box and the controller cabinet terminals.
- 17. Test each loop circuit for continuity, circuit resistance and insulation resistance at the controller cabinet location.
- 18. Where loop conductors are not to be spliced to a lead-in-cable, the ends of the conductors shall be taped and waterproofed with electrical insulating coating.



TYPE 1A TYPE 2A INSTALLATION INSTALLATION

TYPE 3A TYPE 4A INSTALLATION INSTALLATION

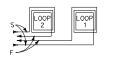
(Type A loop detector configurations illustrated)

1. 1A thru 4A = 1 Type A loop configuration in each lane.
2. 1B thru 4B = 1 Type B loop configuration in each lane.
3. 1C = 1 Type C loop configuration entering lanes as required.
4. 1D thru 4D = 1 Type D loop configuration in each lane.
5. 1E thru 4E = 1 Type E loop configuration in each lane.
6. 10 thru 40 = 1 Type 0 loop configuration in each lane.
(Use Type A, B, C, D, E or 0 loop detector configurations only when specified or shown on plans)

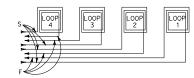


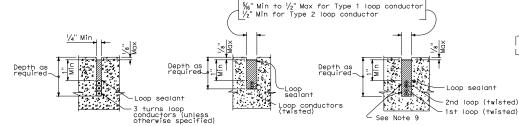
To accompany plans dated.

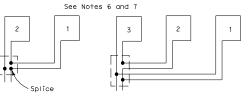


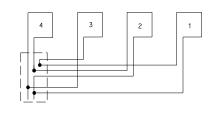












TYPICAL LOOP CONNECTIONS (Dashed lines represent the pull box)

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

SECTION A-A SECTION B-B SECTION C-C SLOT DETAILS - TYPE 1 AND TYPE 2 LOOP CONDUCTOR

ELECTRICAL SYSTEMS (DETECTORS)

NO SCALE

RSP ES-5A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-5A DATED MAY 1, 2006 - PAGE 423 OF THE STANDARD PLANS BOOK DATED MAY 2006.

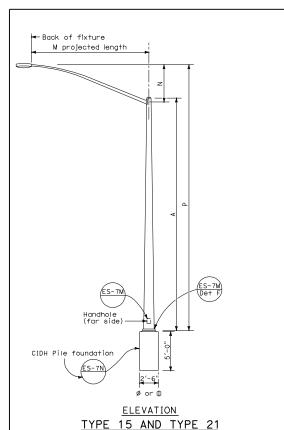
REVISED STANDARD PLAN RSP ES-5A

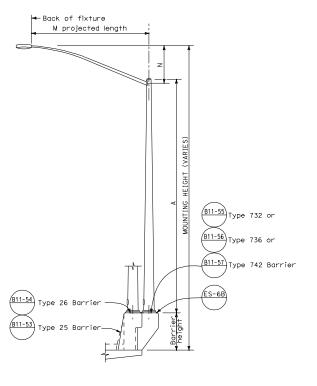
>



POST MILES SHEET TOTAL TOTAL PROJECT NO. SHEETS

Stanley P. Johns





ELEVATION
TYPE 15 AND TYPE 21 BARRIER RAIL MOUNTED

	PLANS APPROVAL DATE The State of California or liss afficers or openis shall not be responsible for the accuracy or completeness of electronic copies of this plan steel.
	To accompany plans dated
%"- 11NC - 1¾" Long HS cap screws, total 3 Tap pole plate.	1 / ₂ / ₄ 1 / ₄

DIST COUNTY

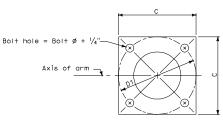
Starting Polycon REGISTERED CIVIL ENGINEER

October 5, 2007

DETAIL R
LUMINAIRE ARM CONNECTION

2%" Ø hole. Chased edges for electrical

conductors



BASE PLATE

		POLE	DATA			Е	LUMINATOS				
POLE	Α	Min	OD	Wall	,	D1 Bolt	Thick-	Anchor Bolts	LUMINAIRE ARM		
TYPE	Height	Base	Тор	Thickness	L	Circle	ness	Size			
15	30′	8''	3 1/8"	0.1196"	1'-0"	1'-0"	1"	1" Ø × 3'-0" × 4"*			
21	35′	85/8"	3%"	0.1196"	1'-0"	1'-0"	1"	11/4"ø × 3'-0" × 4"*	6' - 15' 12'		

* For barrier rail bolts, see Standard Plan ES-6B.

L				LUMINAIRE ARM DATA									
	M Projected	N	Min	Nominal	P								
	Length	Rise	OD A+ Pole	Thickness	Type 15	Type 21							
Γ	6'-0"	2'-0"±	31/4"	0.1196"	31'-6"±	36'-6"±							
Γ	8'-0"	2'-6"±	31/2"	0.1196"	32'-0"±	37′-0"±							
	10'-0"	3'-3"±	3%"	0.1196"	32'-9"±	37′-9"±							
	12'-0" 4'-3"±		3%"	0.1196"	33'-9"±	38′-9"±							
	15'-0"	4'-9"±	41/4"	0.1196"	34'-3"±	39′-3"±							

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LIGHTING STANDARD TYPES 15 AND 21)

NO SCALE

RSP ES-6A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-6A DATED MAY 1, 2006 - PAGE 427 OF THE STANDARD PLANS BOOK DATED MAY 2006.

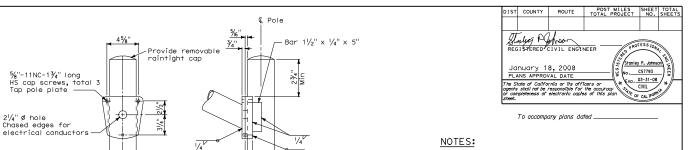
REVISED STANDARD PLAN RSP ES-6A

NOTES:

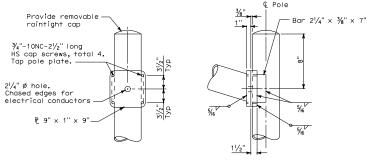
- 1. $\hfill \square$ Indicates arm length to be used unless otherwise noted on the plans.
- 2. For Type 15-SB, use Type 15 standard with Type 30 slip base plate details, see Standard Plan ES-6F.
- 3. For additional notes, see Standard Plan ES-7M and ES-7N.

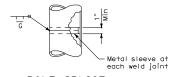
6

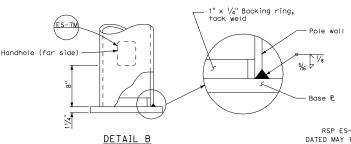
m



DETAIL A - TYPE 30







STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION

1. Sheet steel shall have a minimum yield of 48,000 psi. 2. For slip base details see Standard Plan ES-6F. 3. For Type 30 fixed base use Type 15 base plate, and foundation shown on Revised Standard Plan RSP ES-6A. Use 11/4" Dia x 3'-6" x 4" anchor bolts.

For Type 31 fixed base use Type 32 base plate, anchor bolts and foundation on Standard Plan ES-6G.

5. Handhole shall be located on downstream side of traffic unless noted otherwise on plans.

6. For additional general notes refer to Standard Plan ES-7M.

ELECTRICAL SYSTEMS (LIGHTING STANDARD **TYPES 30 AND 31)**

NO SCALE

RSP ES-6E DATED JANUARY 18, 2008 SUPERCEDES STANDARD PLAN ES-6E DATED MAY 1, 2006 - PAGE 430 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-6E

LUMINAIRE ARM DATA

THICKNESS

0.1196"

* * Type 31 - arm lengths 20'-0"

Projected length of

20'-0"

Type 31

CIDH Pile

foundation

luminaire arm

PROJECTED

LENGTH

* 6'-0"

8'-0"

10'-0"

12'-0"

15'-0"

** 20'-0" 0.1793"

MINIMUM MOUNTING

HEIGHT

36'-9"±

37'-3"±

38'-0"±

39'-0"±

39'-6"±

37'-0"±

2'-6" ø

ELEVATION

OD @ POLE

31/4"

31/2"

33/4"

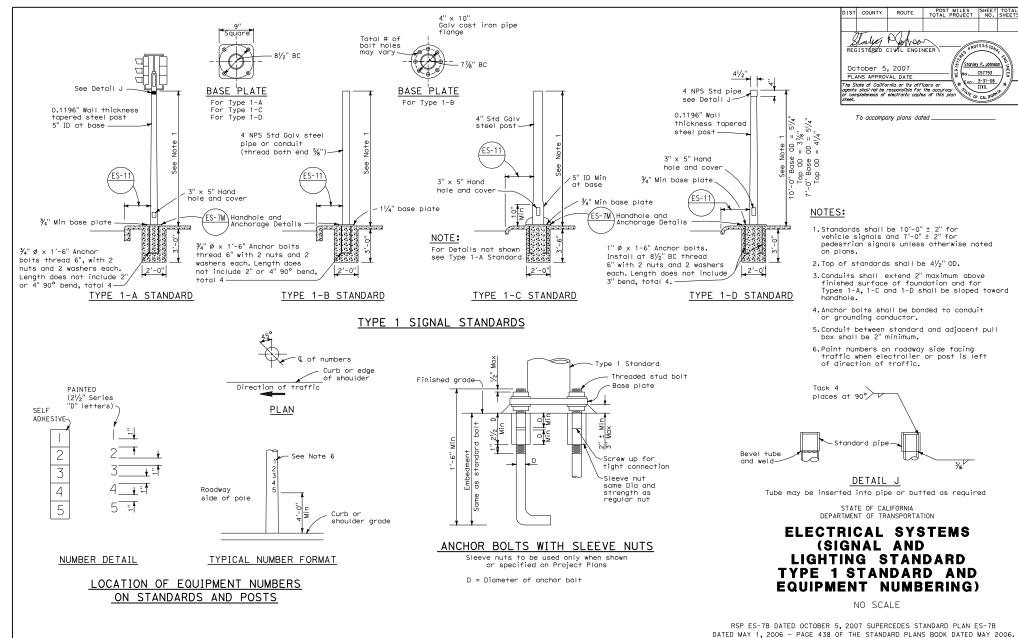
33/4"

41/4"

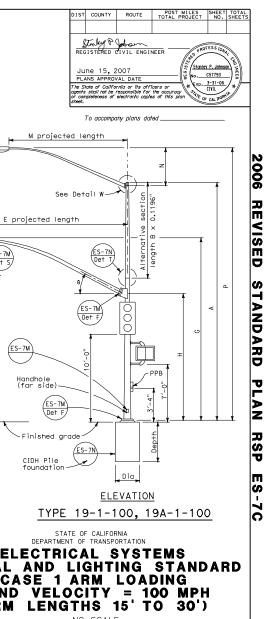
5"

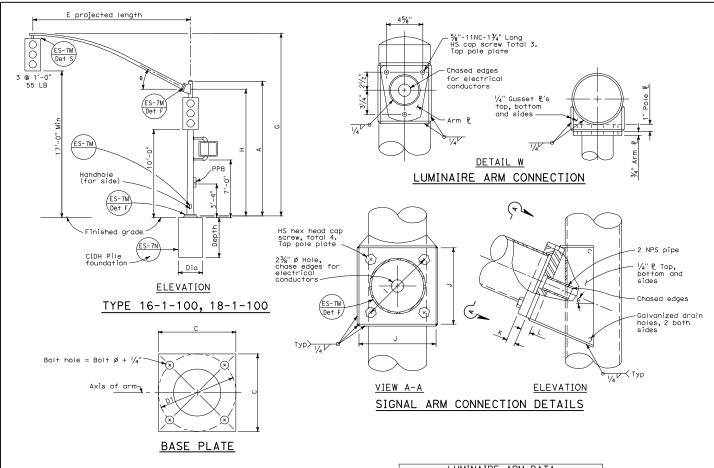
* Type 30 - arm length 6'-0" - 15'-0" maximum





REVISED STANDARD PLAN RSP ES-7B





											LUMINAIRE ARM DATA						
_				SIGNAL	ARM	DATA					М			Min		P Mountir	a Height
1	G Mounting Height	Н		Thickness		HS Cap Screws	J Plate	K Arm PL	L Pole PL	e	Proje Leng	ted th	N Rise		Thickness	30'-0" Pole	35'-0" Pole
1	Height		At Pole		Circle	3CI CW3	size	Thickness	Thickness	θ	6'-)"	2'-0"±	31/4"		31'-6"±	36'-6"±
	21'-8"±	17′-6"	7''								8'-	ס"	2'-6"±	31/2"		32'-0"±	37'-0"±
I	21'-8"±	17-6	71/8"	0.1196"	12"	11/4"-7NC-3"	1'-0"	11/4"	11/2"	23°	10'-	0"	3'-3"±	3 ½"	0.1196"	32'-9"±	37'-9"±
I	22'-8"±	16'-0"	75/6"	0.1196	12	174 - INC-3	1 -0	174	1/2	23	12'-	0"	4'-3"±				
I	23'-0"±	16 -0	8"								15′-	0"	4'-9"±	41/4"		34'-3"±	39'-3"±

Projected

Length

15'-0" 20'-0"

25'-0"

30'-0"

			F	POLE DA	TA				E	BASE PLA	ATE DATA			CIDH PIL	_E FOI	JNDATION		
Pole	Load	Wind Velocity		Mir	n OD		Alterno	ıtive Se	ction		D1		Anchor Bolts	Luminaire	Signal			
Туре	Case	mph	Height			Thickness		Bottom	Top	С	Bolt Circle	Thickness	Size	Arm	Arm	Diameter	Depth	Reinforced
				Base	Тор		Length	DOTTON	ТОР		CITCIC		3120					
16-1-100			18'-6"		81/4"		None							None	15'-0",			
18-1-100		100	17'-0"	10¾"	81/6"	0.1793"	None			1'-6"	1'-51/2"	11/4"	1½" Ø × 42" × 6"	None	20'-0"	2'-6"	7'-2"	
19-1-100] '	100	30'-0"	1074	6%"	0.1793	10'-0"		65%"	-6	1 -372	174	1/2 \$ 2 42 2 6	6'-15' 12'-0"	25'-0",	2 -6	1-2	Yes
19A-1-100			35'-0"		51%6"	1	15'-0"	۰	51%;"					6'-15' 15'-0"	30'-0"			
270																		

Indicates arm length to be used unless otherwise noted on plans.

ELECTRICAL SYSTEMS (SIGNAL AND LIGHTING STANDARD CASE 1 ARM LOADING
WIND VELOCITY = 100 MPH
ARM LENGTHS 15' TO 30')

ÉS-7M)

ES-7M

Det S

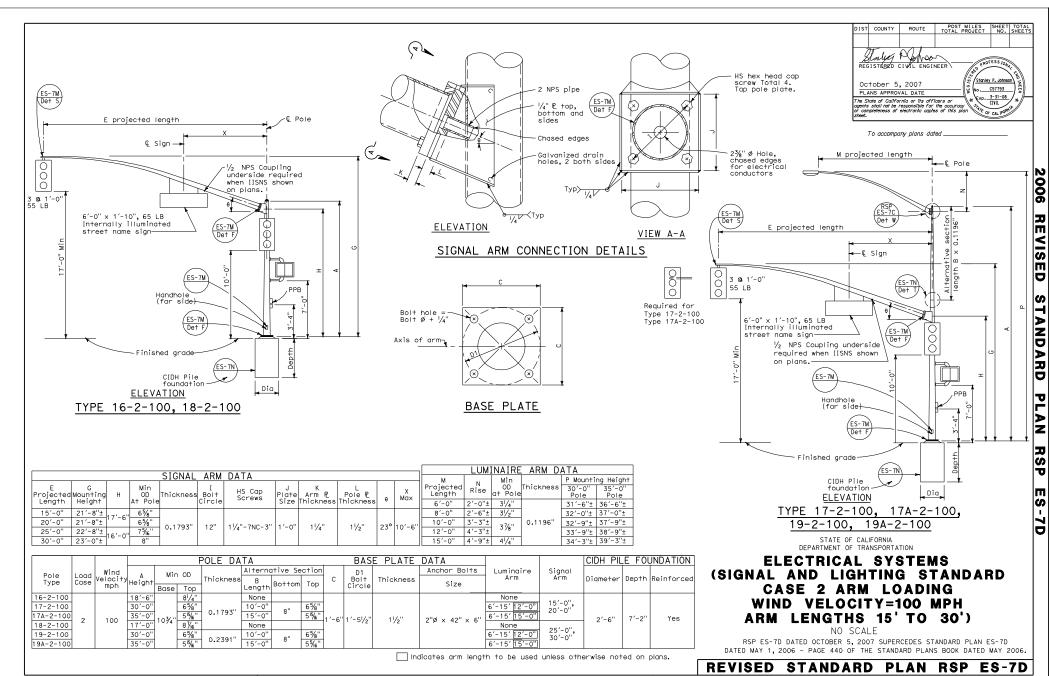
ŏ

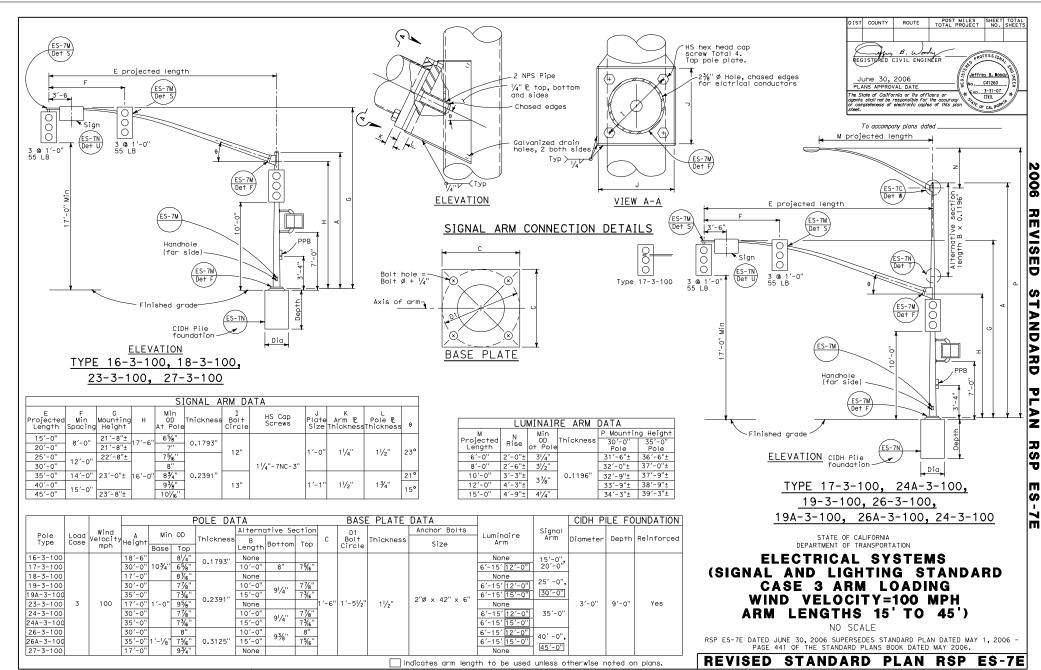
55 LB

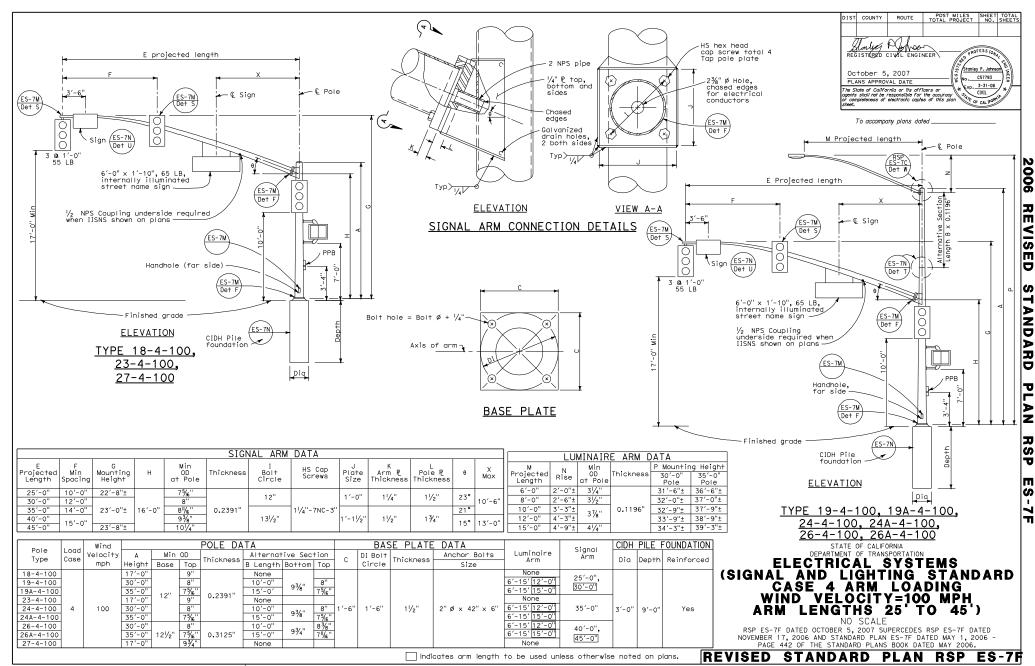
3 @ 1'-0'

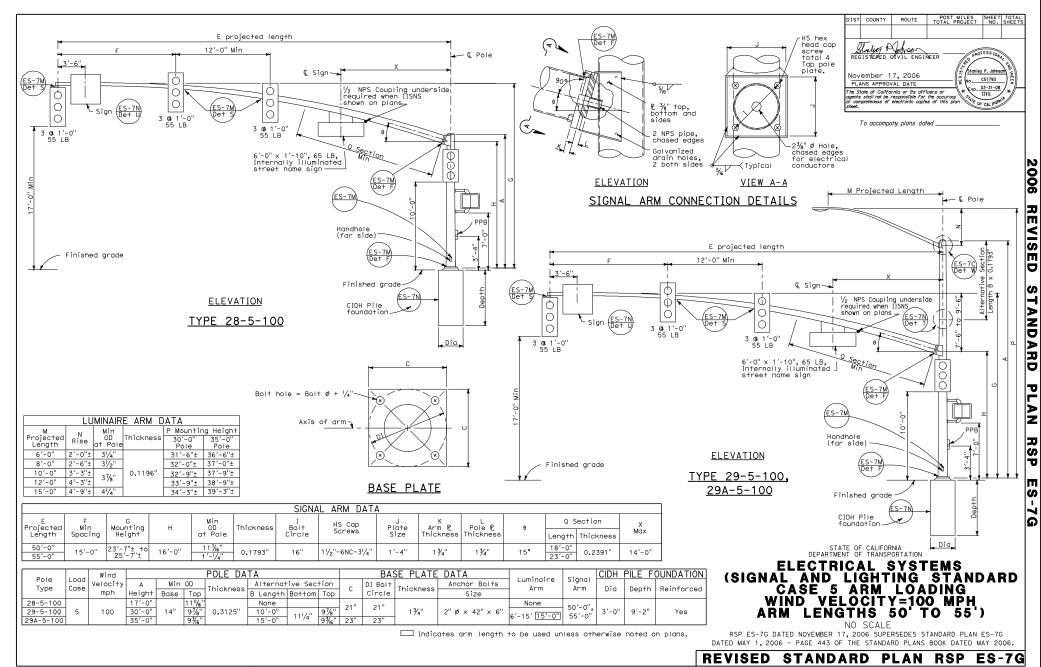
RSP ES-7C DATED JUNE 15, 2007 SUPERSEDES STANDARD PLAN ES-7C DATED MAY 1, 2006 - PAGE 439 OF THE STANDARD PLANS BOOK DATED MAY 2006.

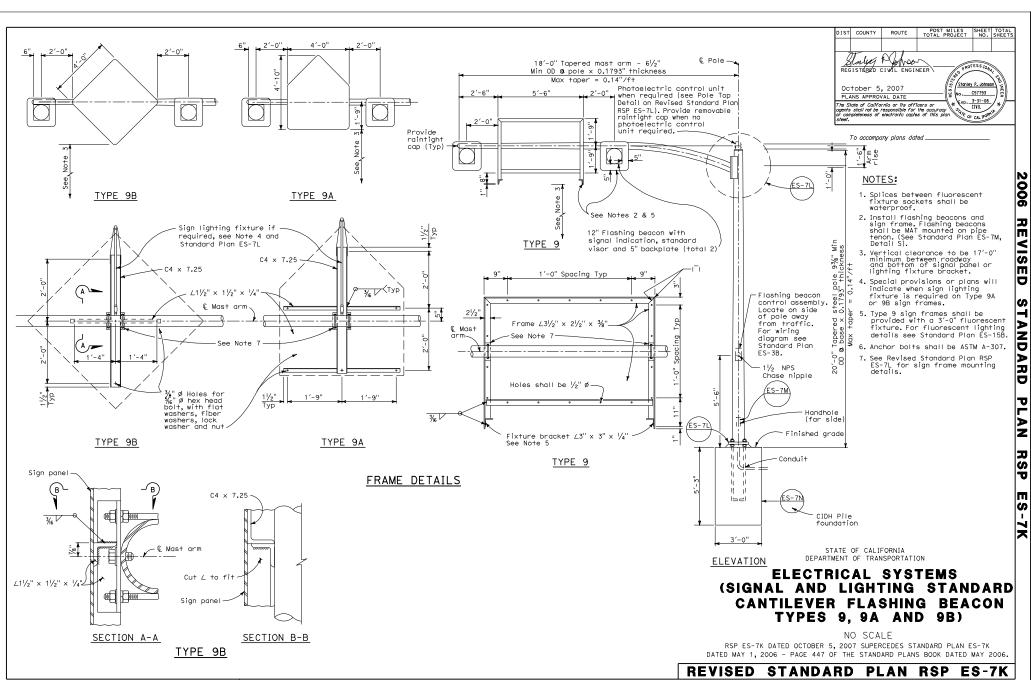
REVISED STANDARD PLAN RSP ES-70

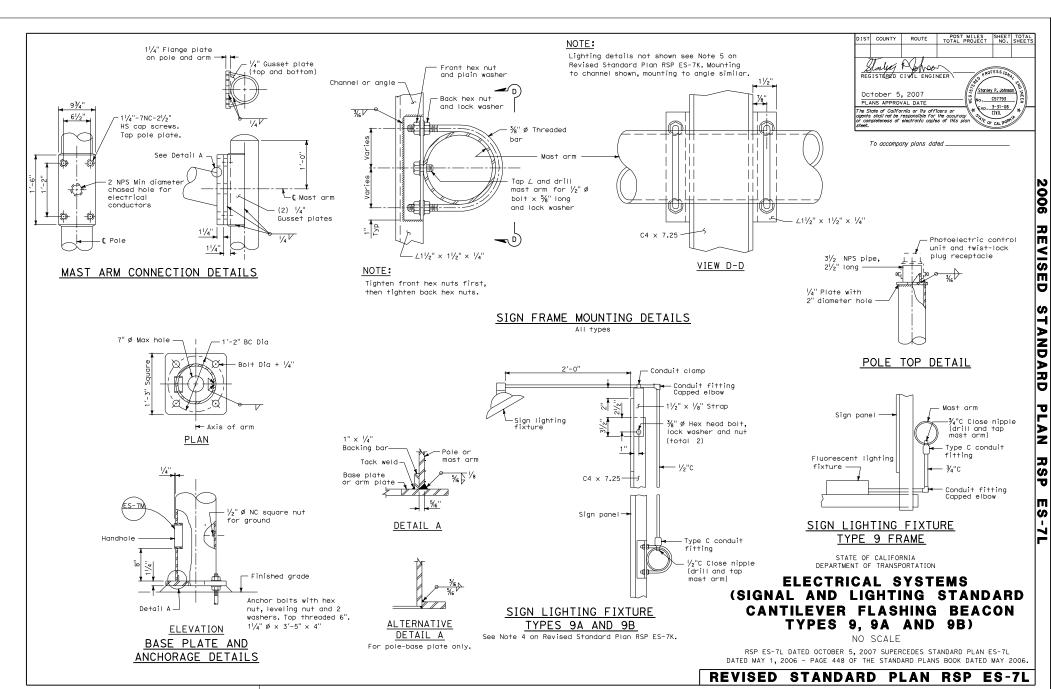












7.10.0

POST MILES SHEET TOTAL TOTAL PROJECT NO. SHEETS

Jeffery G. NcRa

× ELECTRICAL

July D. M. Pal REGISTERED ELECTRICAL ENGINEER

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To accompany plans dated _

October 5, 2007

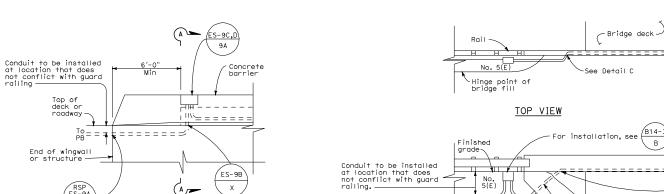
PLANS APPROVAL DATE

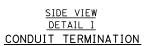
Concrete barrier

ES-9B

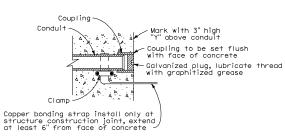
(B14-3

Type 1 conduit





Structure wingwall

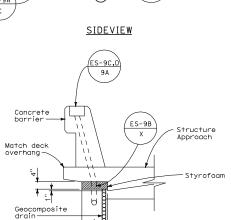


DETAIL C CONDUIT TERMINATION

STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION **ELECTRICAL SYSTEMS** (ELECTRICAL DETAILS STRUCTURE INSTALLATIONS)

RSP ES-9A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-9A DATED MAY 1, 2006 - PAGE 454 OF THE STANDARD PLANS BOOK DATED MAY 2006.

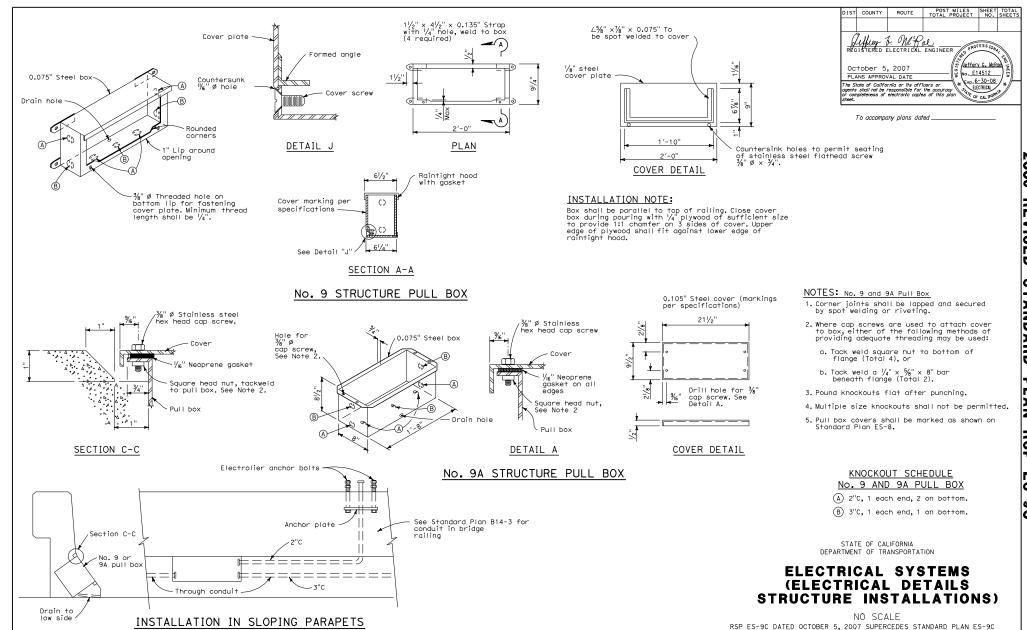
REVISED STANDARD PLAN RSP ES-9A



SECTION A-A

DETAIL A **CONDUIT TERMINATION**





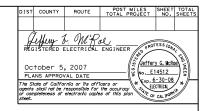
For reinforcement in area of electrolier, see railing sheets. For electrolier anchor bolts, see

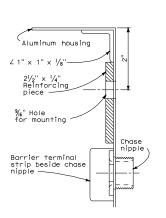
Standard Plan ES-6B.

PLAN RSP ES-9C

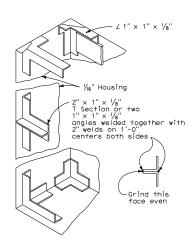
DATED MAY 1, 2006 - PAGE 456 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD

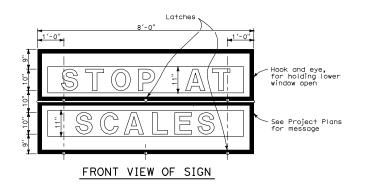


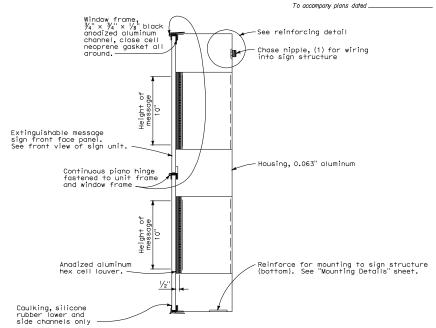


REINFORCING DETAIL



FRAMING DETAILS





CROSS-SECTION OF SIGN

Note

See Wiring Notes and Symbols on Revised Standard Plan RSP ES-14B.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

ELECTRICAL SYSTEMS (LED EXTINGUISHABLE MESSAGE SIGN 10" LETTERS)

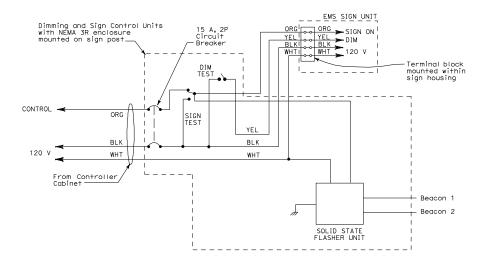
NO SCALE

RSP ES-14A DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-14A DATED MAY 1, 2006 - PAGE 466 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-14A

DIST	COUNTY	ROUTE	POST MILES TOTAL PROJECT	SHEET NO.	TOTAL			
October 5, 2007 PLANS APPROVAL DATE WE STERRED ELECTRICAL ENGINEER WOTESS JONE WHO PLANS APPROVAL DATE WE SEN 6-30-08 E								
agents	shall not be	rnia or its offi responsible for electronic copie	cers or *	CAL IFORM	/ P //			

To accompany plans dated _



STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

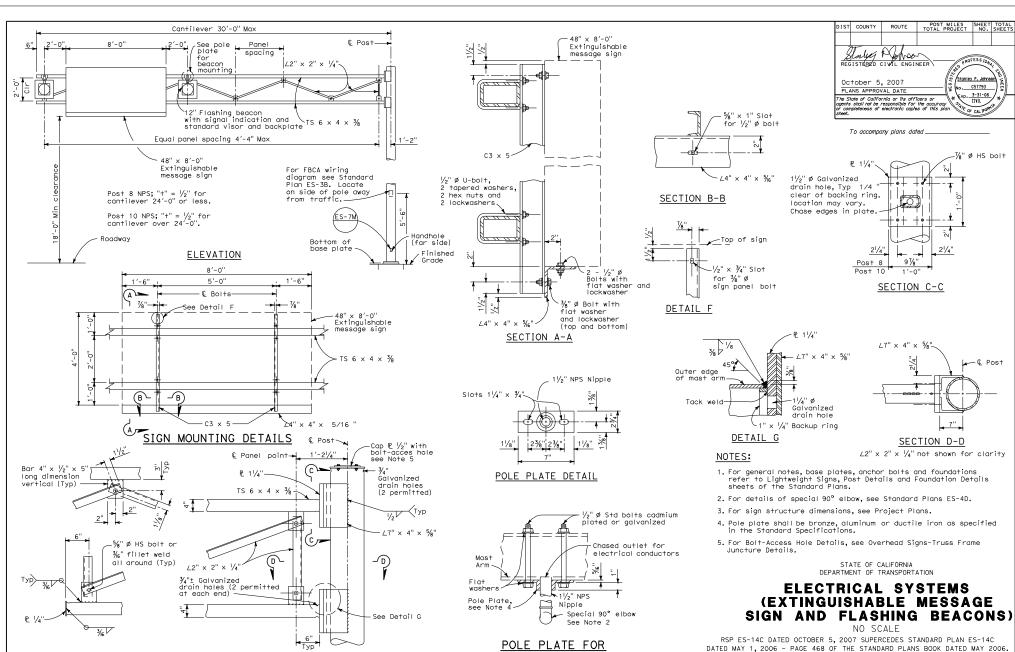
ELECTRICAL SYSTEMS (LED EXTINGUISHABLE MESSAGE SIGN WIRING DIAGRAM)

NO SCALE

RSP ES-14B DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-14B DATED MAY 1, 2006 - PAGE 467 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-14B





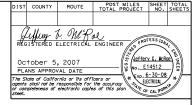
BEACON MOUNTING

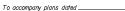
TRUSS FRAME CONNECTION DETAILS

REVISED STANDARD PLAN RSP ES-14C

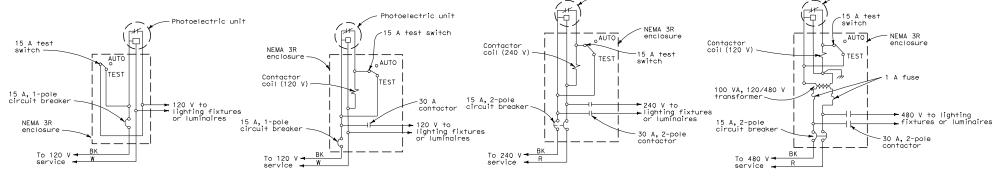
NOTES: (FOR LIGHTING AND SIGN ILLUMINATION CONTROL)

- The ballast voltages of lighting fixtures and luminaires shall match line service voltages.
- 2. Voltage rating of photoelectric controls shall conform to the service voltage indicated on the plans.
- 3. Terminal strip shall be provided for wiring to fixtures.
- 4. Type SC1A, SC2A, SC3A controls are similar to Types SC1, SC2 and SC3 controls respectively except test switch and wiring are not required.





Photoelectric unit



TYPE LC1 CONTROL

For 120 V unswitched circuit with no more than 800 W load.

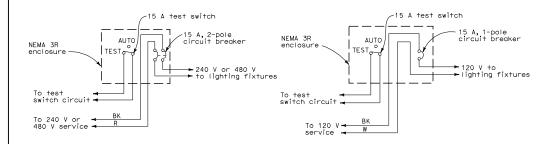
TYPE LC2 CONTROL

For 120 V unswitched circuit

TYPE LC3 CONTROL

For 240 V and 480 V unswitched circuits

Photoelectric unit

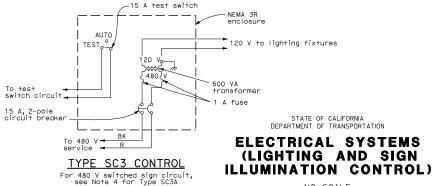


TYPE SC1 CONTROL

For 240 V or 480 V switched circuit, see Note 4 for Type SC1A

TYPE SC2 CONTROL

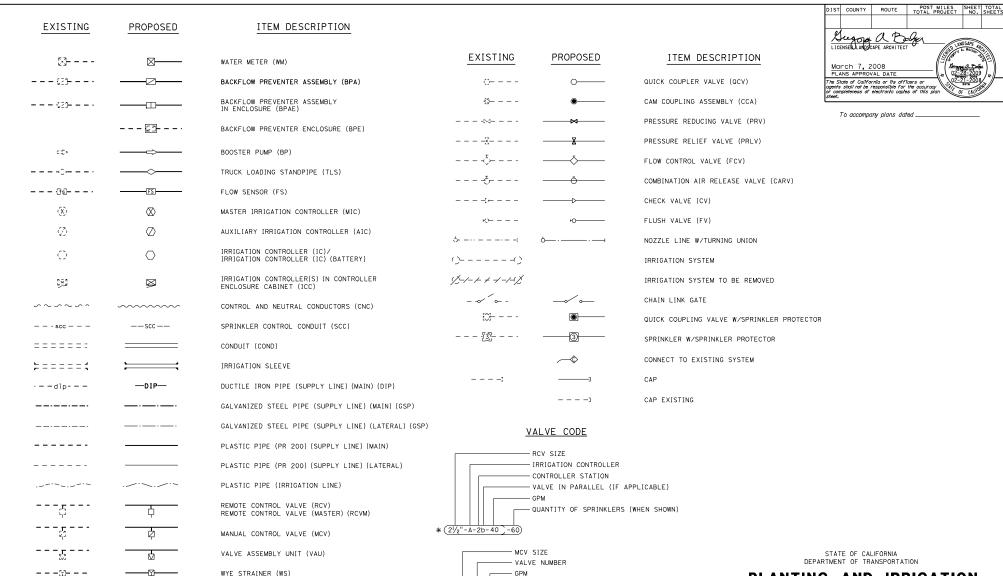
For 120 V switched circuit, see Note 4 for Type SC2A



NO SCALE

RSP ES-15D DATED OCTOBER 5, 2007 SUPERCEDES STANDARD PLAN ES-15D DATED MAY 1, 2006 - PAGE 472 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP ES-15D



* 2"-3-30 -50

* VALVE CODES FOR EXISTING VALVES

ARE SHOWN IN A DASHED ENCLOSURE.

FILTER ASSEMBLY UNIT (FAU)

GATE VALVE (GV)

BALL VALVE (BV)

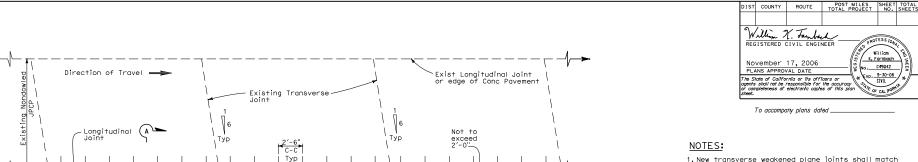
QUANTITY OF TYPE SPRINKLERS (WHEN SHOWN)

PLANTING AND IRRIGATION SYMBOLS

NO SCALE

RSP H2 DATED MARCH 7, 2008 SUPERSEDES STANDARD PLAN H2 DATED MAY 1, 2006 - PAGE 202 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP H2



Tie Bars

5'-0" Min

Transverse Contact Joint

- New transverse weakened plane joints shall match the skewed offset and spacing of the adjacent existing weakened plane joints, as shown.
- Transverse contact joints, with tie bars spaced as shown, shall be installed at the end of paving operations. Transverse contact joints shall be placed at least 5'-0" from any weakened plane joint.
- This Standard Plan only applicable for constructing a nondoweled JPCP shoulder next to existing nondoweled JPCP lane.

TABLE A

111822 11						
Tie Bar Spacing						
Panel Length	Total Tie Bars per Slab	Clearance Tie Bar to Transverse Joint				
9'-0"	3	1'-3"				
9'-6"	3	1'-41/2"				
12'-0"	5	1'-4"				
13'-0"	5	1'-10"				
14'-0"	5	2'-3¾"				
15'-0"	6	1'-8"				

Drill 1" Dia hole into existing JPCP. Use epoxy to bond tie bar to existing concrete pavement.

Typ

R=1/4"

Base

See Alternative Tie Bar Detail, Std Plan P1

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PLAN

SECTION A-A

LONGITUDINAL JOINT
(Between fresh and hardened concrete)

New Fresh JPCP

Hardened JPCP

#6 Deformed tie bar

1'-3"

#6 Deformed tie bar

#6 Deformed tie bar

#6 Deformed tie bar

See Alternative Tie Bar Detail, Std Plan Pi

Edge of Pavement

TRANSVERSE CONTACT JOINT

See Joint Details,
Std Plan P20

Joint

JPCP

Base

SECTION C-C

TRANSVERSE WEAKENED
PLANE JOINT

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

JOINTED PLAIN CONCRETE PAVEMENT-NONDOWELED SHOULDER ADDITION/RECONSTRUCTION

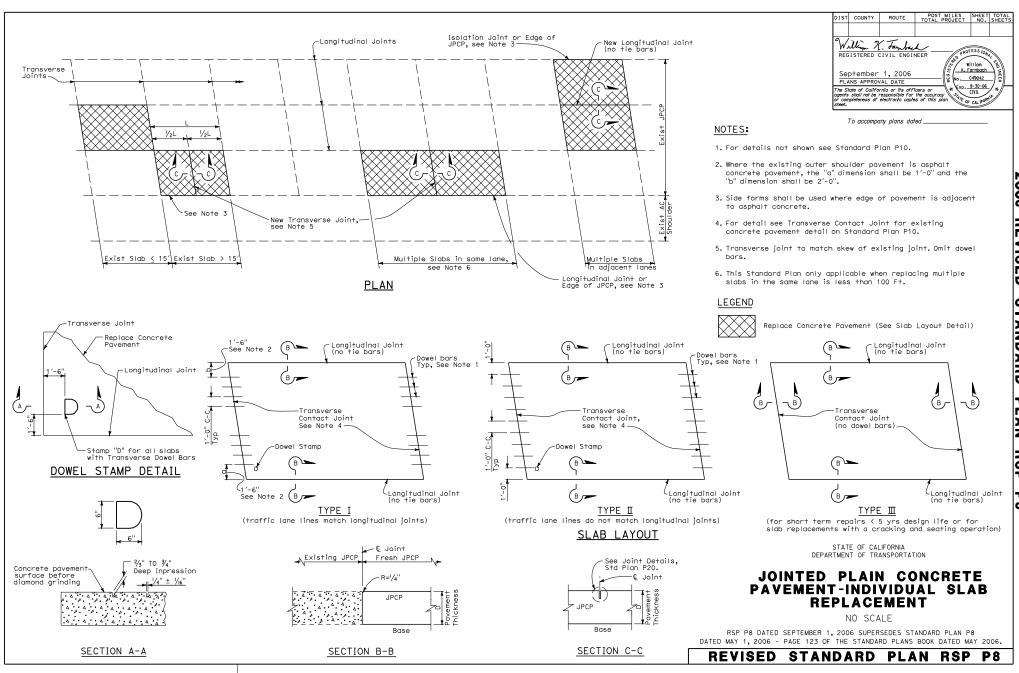
NO SCALE

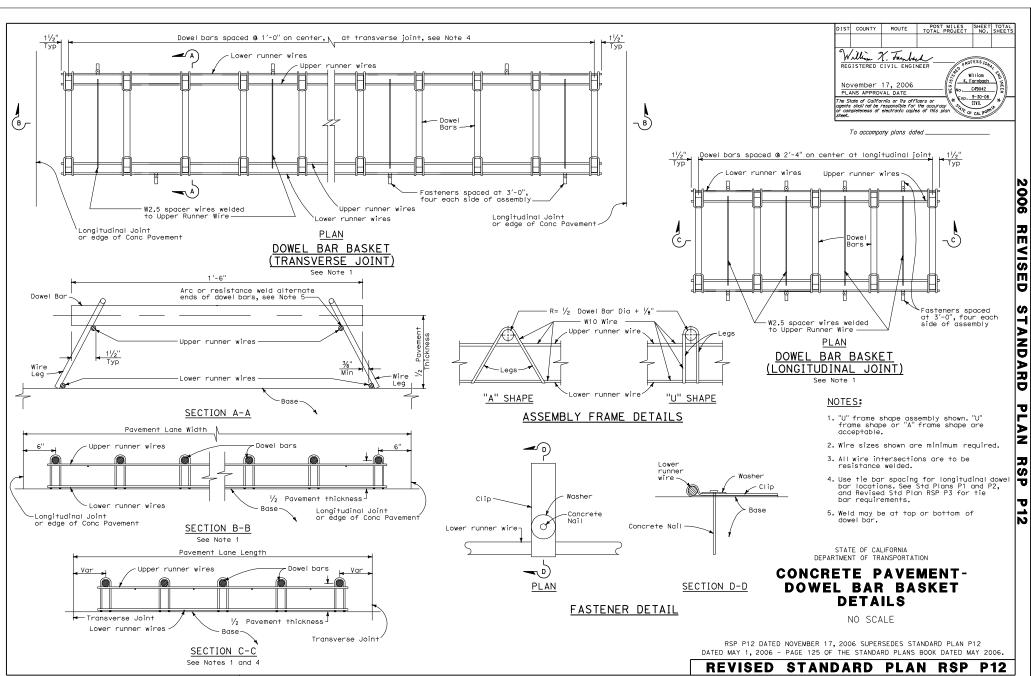
RSP P3 DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN P3
DATED MAY 1, 2006 - PAGE 121 OF THE STANDARD PLANS BOOK DATED MAY 2006.

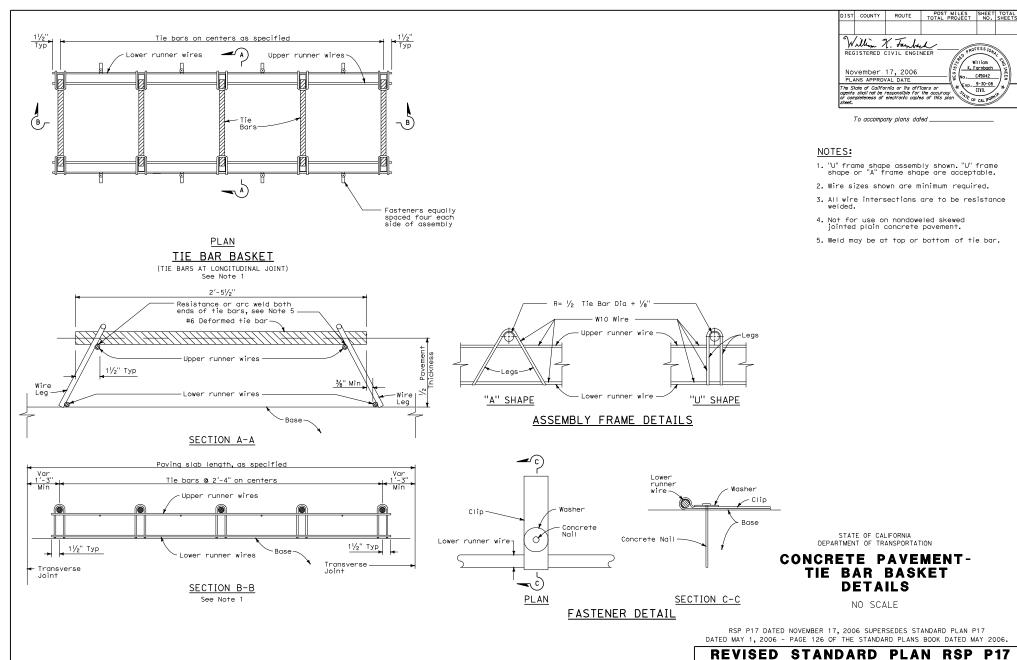
REVISED STANDARD PLAN RSP P3

10-24-05

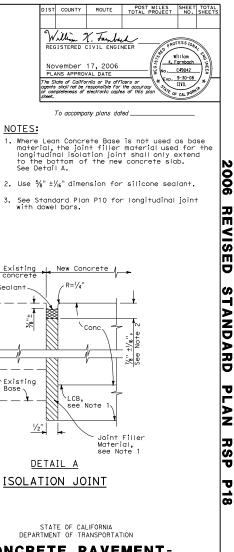








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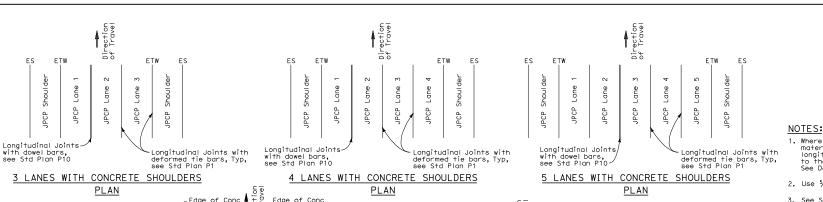


CONCRETE PAVEMENT-LANE SCHEMATICS AND ISOLATION JOINT DETAIL

NO SCALE

RSP P18 DATED NOVEMBER 17, 2006 SUPERSEDES STANDARD PLAN P18 DATED MAY 1, 2006 - PAGE 127 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED



Edge of Conc Edge of Conc Shoulder Shoul AC

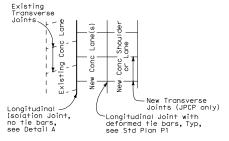
Edge of Conc Edge of Conc ES (ETW 5 FTW. Shou þ Longitudinal Joint with dowel bars, Longitudinal Joints with deformed see Std Plan P10 tie bars, Typ, see Std Plan P1

4 LANES OR LESS WITH AC SHOULDERS PLAN

5 LANES WITH AC SHOULDERS

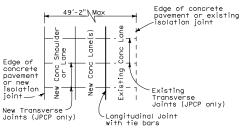
NEW CONSTRUCTION

Location of Longitudinal Joints Jointed Plain Concrete Pavement only



CASE 1 PLAN

Transverse Joints do not existing

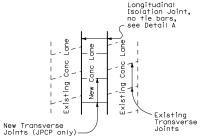


Longitudinal Joints

with deformed tie bars, Typ, see Std Plan P1

CASE 2 PLAN

Transverse Joints align between new and existing



ES

CASE 3 (INTERIOR LANE REPLACEMENT)

Transverse Joints do <u>not</u> align between new and existing

LANE/SHOULDER ADDITION OR RECONSTRUCTION

For JPCP and CRCP

P18

PLAN

PLAN

Existing

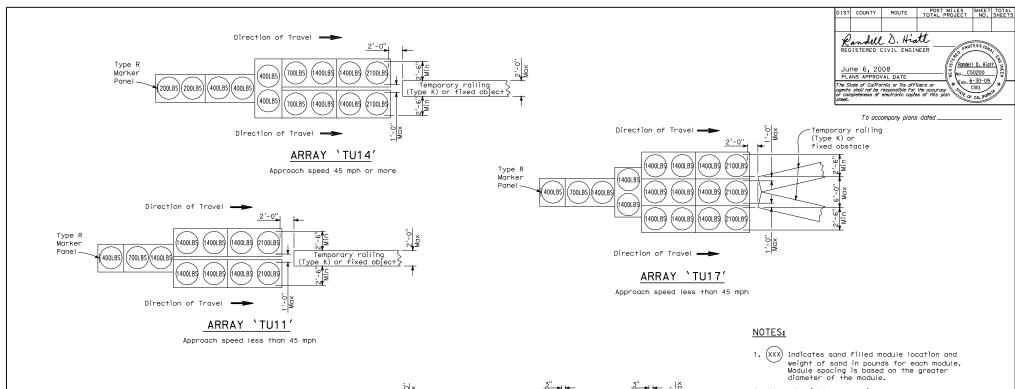
Base

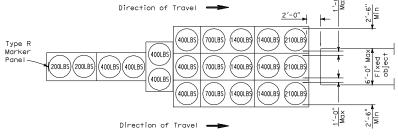
- 1... -

Joint Sealan

STANDARD **PLAN** RSP







ARRAY 'TU21'

Approach speed 45 mph or more

Pallet Roadway surface Module Dia Module Dia Module PLAN Final Roadway surface

ELEVATION

CRASH CUSHION PALLET DETAIL

See Note 7

- 2. All sand weights are nominal.
- Temporary crash cushion arrays shall not encroach on the traveled way.
- Place the top of Type R marker panel 1" below the module lid.
- 5. Refer to Standard Plan A73B for marker details.
- Approach speeds indicated conform to NCHRP 350 Report criteria.
- 7. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY CRASH CUSHION, SAND FILLED (UNIDIRECTIONAL)

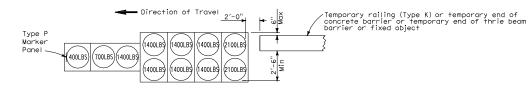
NO SCALE

RSP TIA DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN TIA
DATED MAY 1, 2006 - PAGE 211 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1A



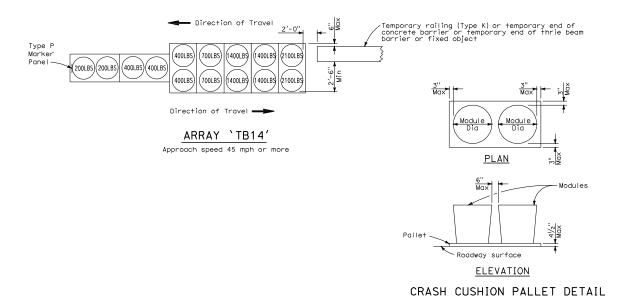
To accompany plans dated _____



ARRAY 'TB11'

Direction of Travel

Approach speed less than 45 mph



See Note 7

NOTES:

- (XXX) Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
- 2. All sand weights are nominal.
- Temporary crash cushion arrays shall not encroach on the traveled way.
- 4. Place the Type P marker panel so that the bottom of the panel rests upon the pallet.
- 5. Refer to Standard Plan A73B for marker details.
- Approach speeds indicated conform to NCHRP 350 Report criteria.
- 7. Use of pallets is optional.

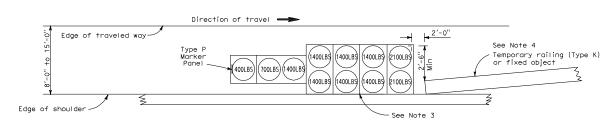
STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY CRASH CUSHION, SAND FILLED (BIDIRECTIONAL)

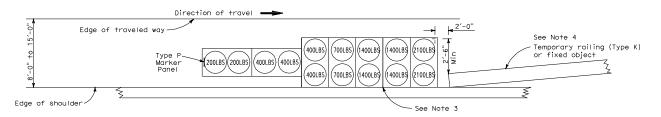
NO SCAL

RSP T1B DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T1B
DATED MAY 1, 2006 - PAGE 212 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T1B

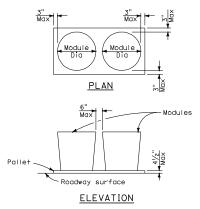


ARRAY 'TS11' Approach speed less than 45 mph See Note 9



ARRAY 'TS14'

Approach speed 45 mph or more See Note 9



CRASH CUSHION PALLET DETAIL

See Note 11



To accompany plans dated

NOTES:

- XXXX Indicates sand filled module location and weight of sand in pounds for each module. Module spacing is based on the greater diameter of the module.
- 2. All sand weights are nominal.
- The temporary crash cushion arrays shown on this plan shall be used only in locations where there will be traffic on one side of the temporary crash cushion array.
- 4. If the fixed object or approach end of the temporary railing is less than 15'-0" from the edge of troveled way, a temporary crash cushion is required in a construction or work zone.
- 5. Temporary crash cushion arrays shall not encroach on the traveled way.
- 6. Arrays for median shoulders shall conform to details shown on this plan for outside shoulders.
- Place the Type P marker panel so that the bottom of the panel rests upon the pallet and faces traffic.
- 8. Refer to Standard Plan A73B for marker details.
- 9. For shoulder widths less than 8'-0", appropriate approved crash cushion protection, other than sand filled modules, shall be provided at fixed objects and at approach ends of temporary railing. The specific type of crash cushion shall be as shown on the project plans or as specified in the Special Provisions, or if not shown on the project plans or specified in the Special Provisions, shall be as approved by the Engineer.
- 10. Approach speeds indicated conform to NCHRP 350 Report criteria.
- 11. Use of pallets is optional.

STATE OF CALIFORNIA
DEPARTMENT OF TRANSPORTATION

TEMPORARY CRASH CUSHION, SAND FILLED (SHOULDER INSTALLATIONS)

NO SCALE

RSP T2 DATED JUNE 6, 2008 SUPERSEDES STANDARD PLAN T2 DATED MAY 1, 2006 - PAGE 213 OF THE STANDARD PLANS BOOK DATED MAY 2006.

REVISED STANDARD PLAN RSP T2

